## Arizona's Instrument to Measure Standards (AIMS HS)

### **Mathematics**

### **Released Items**

November 15, 2007

Arizona Department of Education

As part of Superintendent Tom Horne's ongoing efforts to improve the communication of academic expectations, the Arizona Department of Education is releasing High School reading, writing, and mathematics items to the public. This release is intended to provide students, parents, teachers, and the community with specific examples of the types of skills being assessed on the AIMS tests. The release is divided into a writing/reading form and a mathematics form, similar to the AIMS test.

Included in this release is a previous prompt and directions used in the AIMS assessments. Following the writing prompt are two reading passages, directions, and the items associated with each passage in the form of a mini-test. These passages and items are from the 2002, 2005, and 2007 AIMS administrations. The final section will contain the individual items with the correct answers and statistical information about each item.

The mathematics section consists of a mini-test with thirty items from the 2002 through 2007 AIMS administrations, followed by the individual items and their statistics.

The statistical information provided includes:

- 1) item identification number;
- 2) correct answer;

3) response probability (P-Value), which represents the percentage of students who answered the question correctly;

4) Rasch difficulty, which measures the difficulty of the item on a scale in which -3 indicates a very easy item and +3 indicates an extremely difficult item; and

5) performance objective as the item aligns to the 2003 standards.

The items are reproductions of the actual items as they appeared on the AIMS tests. If you have any questions, please contact Frank Brashear, Director of Test & Item Development, at (602) 542-5031.

AIMS Mathematics Released Items for 2007

# MATHEMATICS

#### Mathematics -

DIRECTIONS: Read each question and choose the best answer.

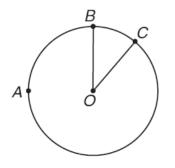
**1.** If a figure is rotated, which of the following characteristics of the figure is preserved?

- I. angle measures
- II. perimeter
- III. area
- A I and II
- **B** II and III
- C I and III
- **D** I, II, and III
- 2. What is the value of the expression below?

$$|-2| - |4| + |3 - 10|$$
  
A -9  
B -1  
C 5  
D 13

- 3. Which of the following is an infinite set?
  - A integers between −5 and 10
  - **B** whole numbers between -5 and 10
  - **C** natural numbers between -5 and 10
  - **D** rational numbers between -5 and 10

4. Points A, B, and C lie on circle O, as shown below.



What is the measure of  $\angle BOC$  if the measure of arc *BAC* is 320°?

- **A** 40°
- **B** 80°
- **C** 160°
- **D** 320°
- 5. Which is the solution to the inequality  $2x 3 \ge -4x + 2$ ?
  - **A**  $x \ge \frac{1}{2}$  **B**  $x \le \frac{1}{2}$  **C**  $x \ge \frac{5}{6}$ **D**  $x \le \frac{5}{6}$

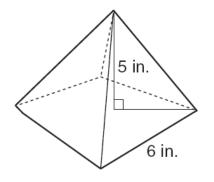
**6.** In order to plan her budget, Jazmin created a chart of her expenses for three months. After paying her bills and setting aside her savings, she spends what is left for entertainment and miscellaneous expenses.

|       | MONTHLY BUDGET |       |          |             |                    |              |           |  |  |  |  |
|-------|----------------|-------|----------|-------------|--------------------|--------------|-----------|--|--|--|--|
| Wages | Month          | P. ar | Gasoling | Car<br>Ins. | Savinoc<br>Savinoc | Entertaining | nicellene |  |  |  |  |
| \$489 | May            | 213   | 56       | 67          | 75                 | 78           |           |  |  |  |  |
| \$511 | June           | 213   | 64       | 67          | 75                 | 92           |           |  |  |  |  |
| \$504 | July           | 213   | 49       | 67          | 75                 | 100          |           |  |  |  |  |

Which of the following is true?

- A Jazmin's wages vary monthly.
- B Jazmin has \$100 each month to spend for entertainment.
- C Jazmin's gas expenses have been consistently decreasing.
- D Jazmin's car payment is over 50% of her wages.
- 7. Lee wants to make a sandwich. He has 5 types of meat, 3 types of cheese, and 2 types of sandwich spreads. If Lee chooses 1 meat, 1 cheese, and 1 sandwich spread, how many different combinations are possible for his sandwich?
  - **A** 10
  - **B** 13
  - **C** 30
  - **D** 33

**8.** The right square pyramid represented below has a base edge of 6 inches and a height of 5 inches.

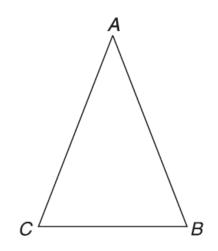


What is the volume in cubic inches of the pyramid?

- **A** 60
- **B** 90
- C 120
- **D** 180
- **9.** Sean is selecting an outfit from among 2 pairs of pants, 4 shirts, and 3 pairs of shoes. How many different outfits consisting of 1 pair of pants, 1 shirt, and 1 pair of shoes are possible?
  - **A** 9
  - **B** 12
  - **C** 24
  - **D** 36

- **10.** Which set contains an irrational number?
  - **A**  $\left\{2300, 0.48, \frac{13}{1}\right\}$
  - **B**  $\left\{ 18, 0.1, \frac{12}{5} \right\}$
  - **c**  $\left\{\frac{3}{8}, 4, \sqrt{52}\right\}$

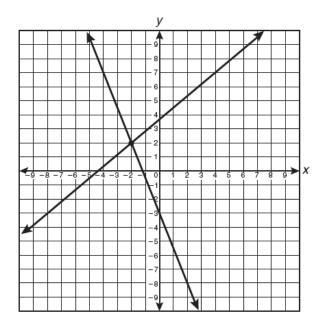
11. Figure *ABC* is an isosceles triangle with base  $\overline{BC}$ .



Which is a true statement about  $\triangle ABC$  ?

- $\mathbf{A} \quad \angle A \cong \angle B$
- **B**  $\overline{AC} \cong \overline{AB}$
- **C**  $\overline{AC} \cong \overline{CB}$
- $\mathbf{D} \quad \angle C \cong \angle A$

12. What is the apparent solution to the system of equations graphed below?



- **A** (−2, −2)
- **B** (−2, 2)
- **C** (2, −2)
- **D** no solution

- 13. Joe has \$20.00. A six-pack of soda costs \$1.89, including tax. What is the greatest number of six-packs of soda he can buy?
  - **A** 5
  - **B** 10
  - **C** 15
  - **D** 20

- 14. Determine the slope m, x-intercept, and y-intercept of the equation 5x - 2y = 10.
  - A slope  $m = \frac{5}{2}$ x-intercept = (2, 0) y-intercept = (0, -5)
  - **B** slope  $m = -\frac{5}{2}$ x-intercept = (2, 0) y-intercept = (0, -5)
  - **c** slope  $m = \frac{2}{5}$ x-intercept = (-5, 0) y-intercept = (0, 2)
  - **D** slope  $m = -\frac{2}{5}$ x-intercept = (-5, 0) y-intercept = (0, 2)

- 15. What is the *y*-intercept of the graph of the equation 3x + 6y = 18?
  - A −6
    B −3
    C 3
  - **D** 6

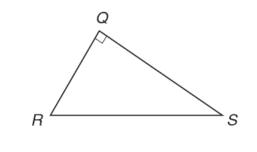
- 16. A pattern is described below.
  - The first term is 2.
  - The second term is 7.
  - Each term after the second is found by adding 5 to the immediately preceding term.

What is the fifth term in this pattern?

A 5B 12

- **C** 17
- **D** 22

**17.** Which of the following must be true for  $\triangle QRS$ ?



- $\mathbf{A} \quad QR + RS = QS$
- $\mathbf{B} \quad QR + QS < RS$
- **C** QS + RS > QR
- **D** QR RS = QS

18. The math club sold candy bars as a fundraiser. The number of candy bars sold by each member is shown below.

| 65 | 76 | 100 | 67 | 44 | 94 | 71 |
|----|----|-----|----|----|----|----|
| 69 | 88 | 80  | 63 | 75 | 82 | 62 |

Which frequency chart accurately represents the data?

| # of Candy<br>Bars Sold | Frequency |
|-------------------------|-----------|
| 40-49                   | 1         |
| 50-59                   | 1         |
| 60-69                   | 3         |
| 70-79                   | 3         |
| 80-89                   | 5         |
| 90—99                   | 0         |
| 100-109                 | 1         |



| # of Candy<br>Bars Sold | Frequency |
|-------------------------|-----------|
| 40-49                   | 0         |
| 50-59                   | 1         |
| 60-69                   | 5         |
| 70–79                   | 4         |
| 80-89                   | 3         |
| 90—99                   | 1         |
| 100-109                 | 1         |

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| # of Candy<br>Bars Sold | Frequency |  |  |  |  |  |
|-------------------------|-----------|--|--|--|--|--|
| 40-49                   | 2         |  |  |  |  |  |
| 50-59                   | 0         |  |  |  |  |  |
| 60-69                   | 5         |  |  |  |  |  |
| 70-79                   | 3         |  |  |  |  |  |
| 80-89                   | 2         |  |  |  |  |  |
| 90-99                   | 1         |  |  |  |  |  |
| 100-109                 | 1         |  |  |  |  |  |
| В                       |           |  |  |  |  |  |

| # of Candy<br>Bars Sold | Frequency |
|-------------------------|-----------|
| 40-49                   | 1         |
| 50-59                   | 0         |
| 60-69                   | 5         |
| 70-79                   | 3         |
| 80-89                   | 3         |
| 90—99                   | 1         |
| 100-109                 | 1         |
|                         | D         |

19. If x = 4 and y = -1, what is the value of the expression below?

> Α 0 √5 В √14 С 4 D

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 $\sqrt{2x-8y}$ 

- 20. Which of the following is an example of independent events?
  - A flipping a fair coin and rolling a six-sided number cube
  - **B** selecting the order in which one picture will be taken of each of four friends by drawing their names out of a hat
  - C selecting the order in which each member of a history class will present a speech to the rest of the class
  - D selecting two different-flavored pieces of candy, one piece at a time, from a bag containing four different flavors of candy
- 21. Which of the following equations represents the line that passes through the points (2, -6) and (-4, 3)?

**A** 
$$y = -\frac{3}{2}x - 7$$

**B** 
$$y = -\frac{2}{3}x - 3$$

**c** 
$$y = -\frac{3}{2}x - 3$$

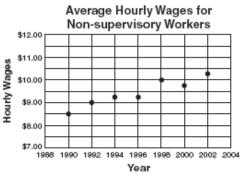
**D** 
$$y = -\frac{2}{3}x + \frac{1}{3}$$

- 22. The class wants to order pizza for a study session. There are 3 different vegetable toppings, 3 different meat toppings, and 2 types of crust available. How many different pizzas are possible with 1 vegetable topping, 1 meat topping, and 1 type of crust?
  - **A** 6
  - **B** 8
  - **C** 12
  - **D** 18

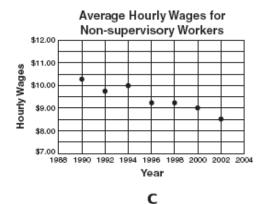
23. The table below shows the average hourly wages for non-supervisory workers for the years 1990–2002. Which scatter plot most accurately shows this information?

| · ·                 | <u> </u> |        | · ·    |        | <u> </u> |        |         |
|---------------------|----------|--------|--------|--------|----------|--------|---------|
| Year                | 1990     | 1992   | 1994   | 1996   | 1998     | 2000   | 2002    |
| Average Hourly Wage | \$8.50   | \$9.00 | \$9.25 | \$9.25 | \$10.00  | \$9.75 | \$10.25 |

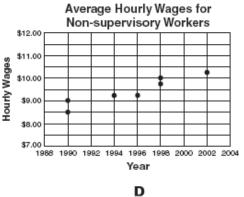




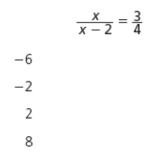








24. For what value of x is the proportion below true?



A

В

С

D

- 25. Maria took a taxicab from her home to the theater downtown. The taxicab company charges a flat fee of \$5.00 plus \$0.25 per mile. Which equation represents C, the total cost of her ride, in terms of m, the length of the trip in miles?
  - A C = 0.25m
  - **B** C = 5.25m
  - **C** C = 5 + 0.25m
  - **D** C = 5m + 0.25

**26.** What is the solution to the equation below?

$$3(x-4)=5x-6$$

**A** 
$$x = -3$$
  
**B**  $x = \frac{3}{4}$   
**C**  $x = 1$   
**D**  $x = 9$ 

27. The sequence below is defined by starting with 1, then adding 2 to the immediately preceding term. What is the 10th term of the sequence if the pattern continues?

1, 3, 5, 7, 9, . . .

- **A** 9
- **B** 11
- **C** 19
- **D** 21
- **28.** What is the solution to the equation below?

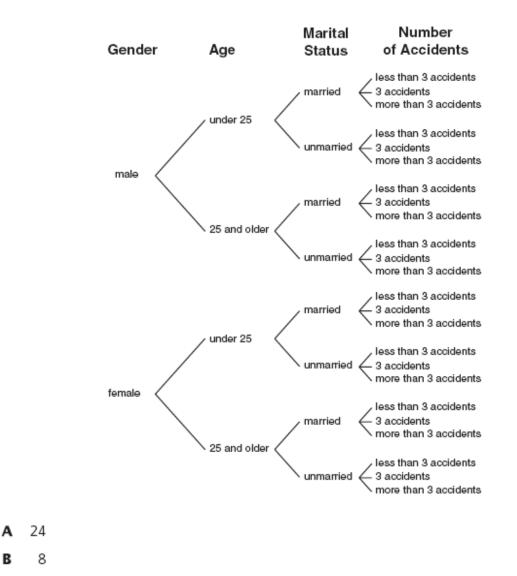
$$\frac{x}{4} = \frac{x+1}{3}$$

- **A** x = -4
- **B** *x* = −1
- **C**  $x = \frac{1}{7}$
- **D**  $x = \frac{4}{7}$
- **29.** Which property of real numbers is illustrated below?

$$x(y+z) = xy + xz$$

- A Associative Property of Addition
- **B** Associative Property of Multiplication
- **C** Distributive Property
- **D** Commutative Property of Multiplication

30. An insurance actuary used the tree diagram below to help categorize drivers by gender, age, marital status, and accident history. Based on the diagram, how many combinations of gender, age, marital status, and number of accidents are possible?





В

С

D

6

3

| Item |  |               |            |        | Item          | Data       |                         |             |  |  |
|------|--|---------------|------------|--------|---------------|------------|-------------------------|-------------|--|--|
|      | Item   | 3015124       | Correct    | D      | P-Value       | .711       | Equated Rasch Value     | -0.2511     |  |  |
| 1    | Number   |               | Answer     |        |               |            | -                       |             |  |  |
| _    | 2003 Mathem  | natics Standa | ard Alignm | ent is | Strand 4 -    | Concept    | 2 – Performance Objecti | ve 6        |  |  |
|      |  |               |            |        |               |            |                         |             |  |  |
|      | If a figure is rotated, which of the following characteristics of the figure is preserved? |               |            |        |               |            |                         |             |  |  |
|      | I. a   | ngle measur   | es         |        |               |            |                         |             |  |  |
|      |  | erimeter      |            |        |               |            |                         |             |  |  |
|      | III. a   |               |            |        |               |            |                         |             |  |  |
|      |  |               |            |        |               |            |                         |             |  |  |
|      | A I  | and II        |            |        |               |            |                         |             |  |  |
|      | B II   | I and III     |            |        |               |            |                         |             |  |  |
|      | CI   | and III       |            |        |               |            |                         |             |  |  |
|      | D L  | II, and III   |            |        |               |            |                         |             |  |  |
|      |  |               |            |        |               |            |                         |             |  |  |
|      | 1  |               | ~          | ~      |               |            |                         | 0.700/      |  |  |
|      | Item   | 3140727       | Correct    | С      | P-Value       | .53        | Equated Rasch Value     | 0.5381      |  |  |
| 2    | Number   |               | Answer     |        | Steen d 1     | Canaant    | 2 Doufournou og Obiosti |             |  |  |
|      | 2003 Mathematics Standard Alignment is Strand 1 – Concept 2 – Performance Objective 3      |               |            |        |               |            |                         |             |  |  |
|      | WI   | hat is the va | lue of the | expr   | ession belov  | <i>v</i> 9 |                         |             |  |  |
|      |  |               |            |        | 2551011 00107 | · .        |                         |             |  |  |
|      |  | -2  -         | 4  +  3 -  | 10     |               |            |                         |             |  |  |
|      | Α  | -9            |            |        |               |            |                         |             |  |  |
|      | В  | -1            |            |        |               |            |                         |             |  |  |
|      | С  | 5             |            |        |               |            |                         |             |  |  |
|      |  | 13            |            |        |               |            |                         |             |  |  |
|      | D  | 15            |            |        |               |            |                         |             |  |  |
|      | <b>T</b> .   | 2261711       | <u>a</u>   | D      | D V 1         | 25         |                         | 2.0274      |  |  |
| 2    | Item<br>Number   | 3261711       | Answer     | D      | P-Value       | .35        | Equated Rasch Value     | 2.0274      |  |  |
| 3    |  | natics Stands |            | ent is | Strand 1 -    | Concept    | 1 – Performance Objecti | ve <b>3</b> |  |  |
|      | 2005 Mathem  | intes Stand   | ard 7 mgmm |        | Strand I      | concept    | I Terrormanee Objecti   |             |  |  |
|      | W  | hich of the   | e followin | g is a | an infinite   | set?       |                         |             |  |  |
|      | Α  | integers      | oetween -  | -5 ar  | nd 10         |            |                         |             |  |  |
|      | В  | whole nu      | Imbers bet | weer   | n —5 and 1    | 0          |                         |             |  |  |
|      | С  | natural n     | umbers be  | etwee  | en –5 and ′   | 10         |                         |             |  |  |
|      | D  | rational r    | numbers b  | etwe   | en —5 and     | 10         |                         |             |  |  |
|      |  |               |            |        |               |            |                         |             |  |  |

|   |   |  | AIN               | o ivia | ulematics r | keleaseu I | Items for 2007         |       |     |
|---|---|--|-------------------|--------|-------------|------------|------------------------|-------|-----|
|   | Item  | 3261727  | Correct           | А      | P-Value     | .75        | Equated Rasch Value    | -0.22 | 241 |
| 4 | Number  |  | Answer            |        |             |            |                        |       |     |
| - | 2003 Mather   | matics Standa  | ard Alignm        | ent is | Strand 4 -  | Concept    | 1 – Performance Object | ive 7 |     |
|   | Points A, B, and C lie on circle O, as shown below.<br>$ \frac{B}{A + C} $ What is the measure of $\angle BOC$ if the |  |                   |        |             |            |                        |       |     |
|   |   | measure of<br><b>A</b> 40°   | arc BAC i         | s 320  | )°?         |            |                        |       |     |
|   |   | <b>B</b> 80°   |                   |        |             |            |                        |       |     |
|   |   | <b>C</b> 160°  |                   |        |             |            |                        |       |     |
|   |   | <b>D</b> 320°  |                   |        |             |            |                        |       |     |
|   |   | 520  |                   |        |             |            |                        |       |     |
|   |   |  |                   |        |             |            |                        |       |     |
| 5 | Item<br>Number  | 3267505  | Correct<br>Answer | С      | P-Value     | .58        | Equated Rasch Value    | 0.73  | 71  |
|   | 2003 Mather   | matics Standa  | ard Alignm        | ent is | Strand 3 –  | Concept    | 3 – Performance Object | ive 9 |     |
|   | 2:<br>A<br>B  | /hich is the<br>$x - 3 \ge -4$ ,<br>$x \ge \frac{1}{2}$<br>$x \le \frac{1}{2}$<br>$x \ge \frac{5}{6}$<br>$x \le \frac{5}{6}$ |                   | o th   | e inequalit | у          |                        |       |     |
|   |   |  |                   |        |             |            |                        |       |     |

|   | Item                           | 3140848 Corre   |  | P-Value  | .72      | Equated Deceb Value   | -0.4598      |  |  |  |
|---|--------------------------------|---|--|--|----------|---|--------------|--|--|--|
| 6 | Number                         | Ansv  |  | r - v alue   | .72      | Equated Rasch Value   | -0.4398      |  |  |  |
| U |                                |   |  | Strand 2 –   | Concept  | <b>1</b> – Performance Object                                 | ive <b>9</b> |  |  |  |
|   | In or<br>payin                 | der to plan her budg  | ng aside h   | n created a ch   | A BUDGET | xpenses for three months. A<br>vhat is left for entertainment | fter         |  |  |  |
|   | AJ<br>BJ<br>CJ                 |   |  |  |          |   |              |  |  |  |
| 7 | Item<br>Number                 | 3261154 Corre<br>Answ   | ver  | P-Value  | .79      | Equated Rasch Value<br><b>3</b> – Performance Object          | -0.2085      |  |  |  |
|   | Le<br>h<br>ai<br>If<br>ai<br>d | ee wants to make<br>as 5 types of mea<br>nd 2 types of san<br>Lee chooses 1 m<br>nd 1 sandwich sp<br>ifferent combina<br>or his sandwich? | e a sandv<br>it, 3 type<br>dwich sp<br>eat, 1 ch<br>read, ho | wich. He<br>es of cheese<br>oreads.<br>eese,<br>w many |          |   |              |  |  |  |
|   | A                              | 10  |  |  |          |   |              |  |  |  |
|   | В                              |   |  |  |          |   |              |  |  |  |
|   | C                              | 30  |  |  |          |   |              |  |  |  |
|   | D                              | 33  |  |  |          |   |              |  |  |  |
|   |                                |   |  |  |          |   |              |  |  |  |

|   |                              |  | AIMS                                     | Mathemati                                     | cs Releas               | sed I | items for 2007                                |                         |   |
|---|------------------------------|--|--|---|-------------------------|-------|---|-------------------------|---|
|   | Item                         | 3140888  | Correct                                  | A P-Val                                       | ue .48                  |       | Equated Rasch Value                           | 0.6234                  |   |
| 8 | Number                       |  | Answer                                   |   |                         |       |   |                         | _ |
|   | 2003 Mathe                   | matics Standa  | ard Alignme                              | ent is Strand                                 | 4 - Cond                | cept  | 4 – Performance Object                        | ive 2                   |   |
|   |                              | The right squ<br>has a base ec<br>5 inches.<br>What is the v<br>the pyramid?<br>A 60<br>B 90 | are pyrami<br>lge of 6 inc<br>5 i<br>5 i | d represente<br>hes and a he                  | d below<br>ight of      |       |   |                         |   |
|   |                              | C 120  |  |   |                         |       |   |                         |   |
|   |                              | <b>D</b> 180   |  |   |                         |       |   |                         |   |
| 9 | Item<br>Number<br>2003 Mathe | 3261155<br>matics Standa   | Answer                                   | C P-Val<br>ent is Strand                      |                         |       | Equated Rasch Value<br>3 – Performance Object | -0.1366<br>ive <b>1</b> |   |
|   |                              | Sean is sele<br>2 pairs of p<br>of shoes. H<br>consisting<br>and 1 pair                      | oants, 4 shi<br>ow many o<br>of 1 pair o | rts, and 3 p<br>different ou<br>f pants, 1 sl | airs<br>itfits<br>iirt, |       |   |                         |   |
|   |                              | <b>A</b> 9   |  |   |                         |       |   |                         |   |
|   |                              | <b>B</b> 12  |  |   |                         |       |   |                         |   |
|   |                              | <b>C</b> 24  |  |   |                         |       |   |                         |   |
|   |                              | <b>D</b> 36  |  |   |                         |       |   |                         |   |
|   |                              |  |  |   |                         |       |   |                         |   |
|   |                              |  |  |   |                         |       |   |                         |   |
|   | I                            |  |  |   |                         |       |   |                         |   |

| <b></b> | Tt  | 2261150                                     | Connect           |              |              | •       | Emister Decel Value    | 1.0702  |  |  |  |  |
|---------|---|---|-------------------|--------------|--------------|---------|------------------------|---------|--|--|--|--|
| 10      | Item<br>Number  | 3261159                                     | Correct<br>Answer | С            | P-Value      | .32     | Equated Rasch Value    | 1.9703  |  |  |  |  |
| 10      |   | natics Stand                                |                   | ent is       | Strand 1 _   | Concept | 1 – Performance Object | ive 1   |  |  |  |  |
|         | 2003 Mathematics Standard Alignment is Strand 1 – Concept 1 – Performance Objective 1 |   |                   |              |              |         |                        |         |  |  |  |  |
|         | Which set contains an irrational  |   |                   |              |              |         |                        |         |  |  |  |  |
|         | number?   |   |                   |              |              |         |                        |         |  |  |  |  |
|         |   |   |                   |              |              |         |                        |         |  |  |  |  |
|         | <b>A</b> $\left\{2300, 0.48, \frac{13}{1}\right\}$                                    |   |                   |              |              |         |                        |         |  |  |  |  |
|         |   |   |                   |              |              |         |                        |         |  |  |  |  |
|         | <b>B</b> $\left\{18, 0.1, \frac{12}{5}\right\}$                                       |   |                   |              |              |         |                        |         |  |  |  |  |
|         |   |   |                   |              |              |         |                        |         |  |  |  |  |
|         |   | <b>c</b> $\left\{\frac{3}{8}, 4, \right\}$  | <u></u>           |              |              |         |                        |         |  |  |  |  |
|         |   |   |                   |              |              |         |                        |         |  |  |  |  |
|         |   | <b>D</b> {0.333                             |                   |              |              |         |                        |         |  |  |  |  |
|         |   | _ (0.000                                    | , ү . ,           |              |              |         |                        |         |  |  |  |  |
|         |   |   |                   |              |              |         |                        |         |  |  |  |  |
|         |   |   |                   |              |              |         |                        |         |  |  |  |  |
|         | Item  | 3015223                                     | Correct           | В            | P-Value      | .86     | Equated Rasch Value    | -0.9012 |  |  |  |  |
| 11      | Number  |   | Answer            |              |              |         |                        |         |  |  |  |  |
|         | 2003 Mather   | natics Standa                               | ard Alignm        | ent is       | s Strand 4 – | Concept | 1 – Performance Object | ive 1   |  |  |  |  |
|         |   |   |                   |              |              |         |                        |         |  |  |  |  |
|         |   | igure ABC                                   |                   | celes        | triangle     |         |                        |         |  |  |  |  |
|         | v   | with base <i>B</i>                          | BC.               |              |              |         |                        |         |  |  |  |  |
|         |   |   |                   |              |              |         |                        |         |  |  |  |  |
|         |   |   | A                 |              |              |         |                        |         |  |  |  |  |
|         |   |   | $\wedge$          |              |              |         |                        |         |  |  |  |  |
|         |   |   | / \               | $\backslash$ |              |         |                        |         |  |  |  |  |
|         |   |   | /                 | $\backslash$ |              |         |                        |         |  |  |  |  |
|         |   |   | /                 |              |              |         |                        |         |  |  |  |  |
|         |   |   | /                 |              |              |         |                        |         |  |  |  |  |
|         |   |   | /                 | \            | \            |         |                        |         |  |  |  |  |
|         |   |   | /                 |              | $\backslash$ |         |                        |         |  |  |  |  |
|         |   |   | /                 |              |              |         |                        |         |  |  |  |  |
|         |   | /   |                   |              |              |         |                        |         |  |  |  |  |
|         |   | C └─  |                   |              | `B           |         |                        |         |  |  |  |  |
|         |   |   |                   |              |              |         |                        |         |  |  |  |  |
|         | ١   | Nhich is a t                                | rue state         | men          | t            |         |                        |         |  |  |  |  |
|         | â   | about $\triangle ABC$ ?                     |                   |              |              |         |                        |         |  |  |  |  |
|         |   |   |                   |              |              |         |                        |         |  |  |  |  |
|         | 4   | $A  \angle A \cong \Box$                    | ∠B                |              |              |         |                        |         |  |  |  |  |
|         |   | <b>B</b> $\overline{AC} \cong \overline{A}$ | B                 |              |              |         |                        |         |  |  |  |  |
|         |   |   |                   |              |              |         |                        |         |  |  |  |  |
|         |   | $\overline{AC} \cong \overline{C}$          | B                 |              |              |         |                        |         |  |  |  |  |
|         | r   | <b>)</b> ∠C ≅ ∠                             | Λ                 |              |              |         |                        |         |  |  |  |  |
|         | -   |   | _/٦               |              |              |         |                        |         |  |  |  |  |
|         |   |   |                   |              |              |         |                        |         |  |  |  |  |

AIMS Mathematics Released Items for 2007

|    |                                    | AIMS Mathematics Released Items for 2007  |  |  |  |  |  |  |  |  |  |  |  |
|----|------------------------------------|---|--|--|--|--|--|--|--|--|--|--|--|
|    | Item                               | 3140700 Correct B P-Value .75 Equated Rasch Value -0.2004   |  |  |  |  |  |  |  |  |  |  |  |
| 10 | Number                             | Answer  |  |  |  |  |  |  |  |  |  |  |  |
| 12 | 2003 Mather                        | atics Standard Alignment is Strand 4 – Concept 3 – Performance Objective 4                                |  |  |  |  |  |  |  |  |  |  |  |
|    | -                                  |   |  |  |  |  |  |  |  |  |  |  |  |
|    |                                    | What is the apparent solution to the system of equations graphed below?                                   |  |  |  |  |  |  |  |  |  |  |  |
|    | system of equations graphed below? |   |  |  |  |  |  |  |  |  |  |  |  |
|    |                                    |   |  |  |  |  |  |  |  |  |  |  |  |
|    |                                    |   |  |  |  |  |  |  |  |  |  |  |  |
|    |                                    |   |  |  |  |  |  |  |  |  |  |  |  |
|    |                                    |   |  |  |  |  |  |  |  |  |  |  |  |
|    |                                    |   |  |  |  |  |  |  |  |  |  |  |  |
|    |                                    |   |  |  |  |  |  |  |  |  |  |  |  |
|    |                                    |   |  |  |  |  |  |  |  |  |  |  |  |
|    |                                    | $9 - 8 - 7 - 6 - 5 - 4 - 3 - 2 - 1 0 + 2 - 3 + 5 - 6 - 7 - 8 - 9 \rightarrow X$                           |  |  |  |  |  |  |  |  |  |  |  |
|    |                                    |   |  |  |  |  |  |  |  |  |  |  |  |
|    |                                    |   |  |  |  |  |  |  |  |  |  |  |  |
|    |                                    |   |  |  |  |  |  |  |  |  |  |  |  |
|    |                                    |   |  |  |  |  |  |  |  |  |  |  |  |
|    |                                    |   |  |  |  |  |  |  |  |  |  |  |  |
|    |                                    |   |  |  |  |  |  |  |  |  |  |  |  |
|    |                                    |   |  |  |  |  |  |  |  |  |  |  |  |
|    |                                    | <b>A</b> (-2, -2)   |  |  |  |  |  |  |  |  |  |  |  |
|    |                                    | <b>B</b> (-2, 2)  |  |  |  |  |  |  |  |  |  |  |  |
|    |                                    | <b>C</b> (2, -2)  |  |  |  |  |  |  |  |  |  |  |  |
|    |                                    |   |  |  |  |  |  |  |  |  |  |  |  |
|    |                                    | D no solution   |  |  |  |  |  |  |  |  |  |  |  |
|    |                                    |   |  |  |  |  |  |  |  |  |  |  |  |
|    | T                                  |   |  |  |  |  |  |  |  |  |  |  |  |
| 10 | Item                               | 3140642 Correct B P-Value .82 Equated Rasch Value -1.1396   |  |  |  |  |  |  |  |  |  |  |  |
| 13 | Number                             | Answer       Answer         atics Standard Alignment is Strand 1 – Concept 2 – Performance Objective 2    |  |  |  |  |  |  |  |  |  |  |  |
|    | 2005 Mather                        | and standard Angninent is strand $\mathbf{I}$ – Concept $\mathbf{Z}$ – Performance Objective $\mathbf{Z}$ |  |  |  |  |  |  |  |  |  |  |  |
|    |                                    | has \$20.00 A given and of and a  |  |  |  |  |  |  |  |  |  |  |  |
|    |                                    | be has \$20.00. A six-pack of soda  |  |  |  |  |  |  |  |  |  |  |  |
|    |                                    | osts \$1.89, including tax. What is the   |  |  |  |  |  |  |  |  |  |  |  |
|    |                                    | reatest number of six-packs of soda   |  |  |  |  |  |  |  |  |  |  |  |
|    | 1                                  | e can buy?  |  |  |  |  |  |  |  |  |  |  |  |
|    |                                    | 5   |  |  |  |  |  |  |  |  |  |  |  |
|    |                                    |   |  |  |  |  |  |  |  |  |  |  |  |
|    |                                    | 10  |  |  |  |  |  |  |  |  |  |  |  |
|    |                                    | 15  |  |  |  |  |  |  |  |  |  |  |  |
|    |                                    |   |  |  |  |  |  |  |  |  |  |  |  |
|    |                                    | 20  |  |  |  |  |  |  |  |  |  |  |  |
|    |                                    |   |  |  |  |  |  |  |  |  |  |  |  |
|    |                                    |   |  |  |  |  |  |  |  |  |  |  |  |

|    |             | Anvis Mamematics Released Items for 2007   |  |  |  |  |  |  |  |  |  |  |  |
|----|-------------|--|--|--|--|--|--|--|--|--|--|--|--|
|    | Item        | 2019624CorrectAP-Value.411Equated Rasch Value1.3714  |  |  |  |  |  |  |  |  |  |  |  |
| 14 | Number      | Answer   |  |  |  |  |  |  |  |  |  |  |  |
|    | 2003 Mather | natics Standard Alignment is Strand <b>3</b> – Concept <b>4</b> – Performance Objective <b>1</b> |  |  |  |  |  |  |  |  |  |  |  |
|    |             |  |  |  |  |  |  |  |  |  |  |  |  |
|    |             | Determine the slope <i>m</i> , <i>x</i> -intercept,  |  |  |  |  |  |  |  |  |  |  |  |
|    |             | and y-intercept of the equation  |  |  |  |  |  |  |  |  |  |  |  |
|    |             | 5x - 2y = 10.  |  |  |  |  |  |  |  |  |  |  |  |
|    |             |  |  |  |  |  |  |  |  |  |  |  |  |
|    |             | A slope $m = \frac{5}{2}$  |  |  |  |  |  |  |  |  |  |  |  |
|    |             | x-intercept = $(2, 0)$   |  |  |  |  |  |  |  |  |  |  |  |
|    |             | y-intercept = $(0, -5)$  |  |  |  |  |  |  |  |  |  |  |  |
|    |             | <b>B</b> slope $m = -\frac{5}{2}$  |  |  |  |  |  |  |  |  |  |  |  |
|    |             | x-intercept = $(2, 0)$   |  |  |  |  |  |  |  |  |  |  |  |
|    |             | y-intercept = $(0, -5)$  |  |  |  |  |  |  |  |  |  |  |  |
|    |             | <b>c</b> slope $m = \frac{2}{5}$   |  |  |  |  |  |  |  |  |  |  |  |
|    |             | x-intercept = $(-5, 0)$  |  |  |  |  |  |  |  |  |  |  |  |
|    |             | y-intercept = (0, 2)   |  |  |  |  |  |  |  |  |  |  |  |
|    |             | <b>D</b> slope $m = -\frac{2}{5}$  |  |  |  |  |  |  |  |  |  |  |  |
|    |             | x-intercept = $(-5, 0)$  |  |  |  |  |  |  |  |  |  |  |  |
|    |             |  |  |  |  |  |  |  |  |  |  |  |  |
|    |             | y-intercept = (0, 2)   |  |  |  |  |  |  |  |  |  |  |  |
|    | Item        | 3015151 Correct C P-Value .60 Equated Rasch Value 0.5652   |  |  |  |  |  |  |  |  |  |  |  |
| 15 | Number      | Answer Answer  |  |  |  |  |  |  |  |  |  |  |  |
| 15 |             | natics Standard Alignment is Strand <b>3</b> – Concept <b>4</b> – Performance Objective <b>1</b> |  |  |  |  |  |  |  |  |  |  |  |
|    | 2003 Mathen | hates Standard Auginient is Strand 5 Concept 4 Terrormanee Objective 1                           |  |  |  |  |  |  |  |  |  |  |  |
|    |             |  |  |  |  |  |  |  |  |  |  |  |  |
|    |             | What is the y-intercept of the graph of the equation $3x + 6y = 18$ ?                            |  |  |  |  |  |  |  |  |  |  |  |
|    |             | <b>A</b> -6  |  |  |  |  |  |  |  |  |  |  |  |
|    |             | <b>B</b> −3  |  |  |  |  |  |  |  |  |  |  |  |
|    |             | <b>C</b> 3   |  |  |  |  |  |  |  |  |  |  |  |
|    |             | <b>D</b> 6   |  |  |  |  |  |  |  |  |  |  |  |
|    |             |  |  |  |  |  |  |  |  |  |  |  |  |
|    |             |  |  |  |  |  |  |  |  |  |  |  |  |
| ·  |             |  |  |  |  |  |  |  |  |  |  |  |  |

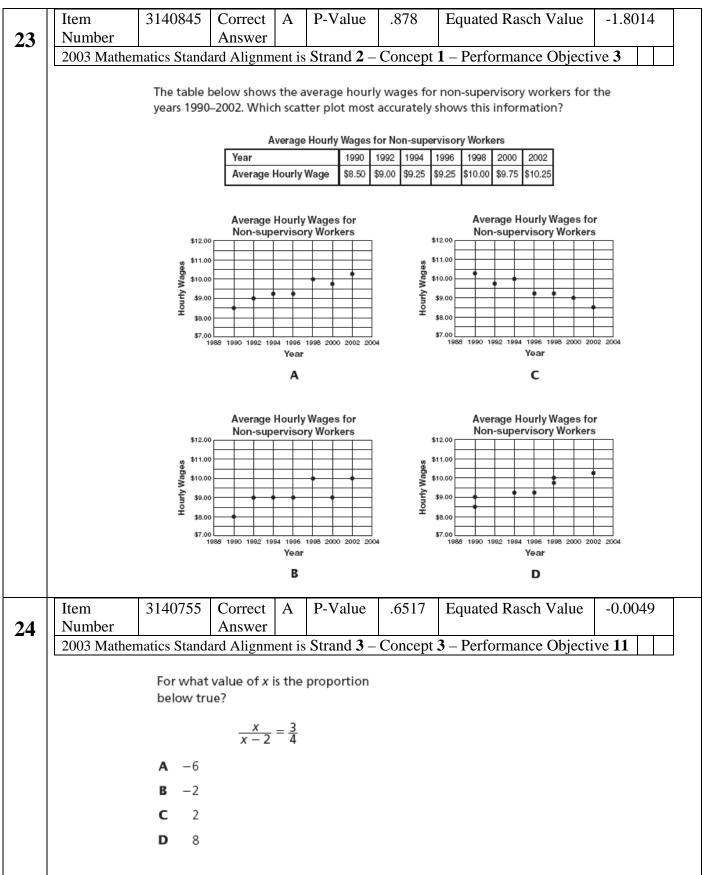
AIMS Mathematics Released Items for 2007

|    |                |  |                   |        |            |         | items for 2007         |        |   |  |  |  |  |
|----|----------------|--|-------------------|--------|------------|---------|------------------------|--------|---|--|--|--|--|
| 16 | Item<br>Number | 3267518  | Correct<br>Answer | D      | P-Value    | .83     | Equated Rasch Value    | -0.954 |   |  |  |  |  |
| 16 |                | matics Standa  |                   | ent is | Strand 3 – | Concept | 1 – Performance Object | ive 2  | - |  |  |  |  |
|    |                | <ul> <li>A pattern is described below.</li> <li>The first term is 2.</li> <li>The second term is 7.</li> <li>Each term after the second<br/>is found by adding 5 to the<br/>immediately preceding term.</li> </ul> |                   |        |            |         |                        |        |   |  |  |  |  |
|    |                |  | ne fifth tei      | rm in  | this patte | rn?     |                        |        |   |  |  |  |  |
|    |                | <b>A</b> 5<br><b>B</b> 12  |                   |        |            |         |                        |        |   |  |  |  |  |
|    |                | <b>C</b> 17  |                   |        |            |         |                        |        |   |  |  |  |  |
|    |                | <b>D</b> 22  |                   |        |            |         |                        |        |   |  |  |  |  |
|    |                |  |                   |        |            |         |                        |        |   |  |  |  |  |
| 17 | Item<br>Number | 3140881  | Correct<br>Answer | C      | P-Value    | .61     | Equated Rasch Value    | 0.3271 |   |  |  |  |  |
|    | 2003 Mather    | matics Standa  | ard Alignmo       | ent is | Strand 4 – | Concept | 1 – Performance Object | ive 9  |   |  |  |  |  |
|    |                | Which o  | f the follo       | owin   | g must be  | true    |                        |        |   |  |  |  |  |
|    |                | for $\triangle QR$   |                   |        | 9          |         |                        |        |   |  |  |  |  |
|    |                |  |                   |        |            |         |                        |        |   |  |  |  |  |
|    |                |  | Q                 |        |            |         |                        |        |   |  |  |  |  |
|    |                |  | $\sim$            |        |            |         |                        |        |   |  |  |  |  |
|    |                |  |                   |        |            |         |                        |        |   |  |  |  |  |
|    |                |  | /                 |        |            | C       |                        |        |   |  |  |  |  |
|    |                | R '  |                   |        |            | S       |                        |        |   |  |  |  |  |
|    |                | A QR -   | + RS = QS         | 5      |            |         |                        |        |   |  |  |  |  |
|    |                | B QR -   | + QS < RS         | 5      |            |         |                        |        |   |  |  |  |  |
|    |                | $\mathbf{C}$ QS -  | + RS > QF         | ?      |            |         |                        |        |   |  |  |  |  |
|    |                |  | -RS = QS          |        |            |         |                        |        |   |  |  |  |  |
|    |                |  | N3 – Q3           | ,      |            |         |                        |        |   |  |  |  |  |
|    |                |  |                   |        |            |         |                        |        |   |  |  |  |  |
|    |                |  |                   |        |            |         |                        |        |   |  |  |  |  |

#### AIMS Mathematics Released Items for 2007

|    | _           | •            |                    |           |                | Clease     | ed Items to             | 1 2007           |                 |   |
|----|-------------|--------------|--------------------|-----------|----------------|------------|-------------------------|------------------|-----------------|---|
|    | Item        | 2019589      | Correc             | t D       | P-Value        | .86        | Equate                  | ed Rasch Valu    | ue -1.3102      |   |
| 18 | Number      |              | Answe              | er        |                |            |                         |                  |                 |   |
| 10 | 2003 Mather | natics Stand | ard Align          | ment is   | Strand 2 -     | Conce      | ept <b>1</b> – Perf     | formance Obj     | ective 3        |   |
|    |             |              | 0                  |           |                |            | •                       | 5                |                 |   |
|    |             | The math     | club sold          | candy ba  | rs as a fundra | aiser. The | e number of (           | andy bars sold b | oy each         |   |
|    |             | member       | is shown b         | elow.     |                |            |                         |                  |                 |   |
|    |             |              |                    |           |                |            |                         |                  |                 |   |
|    |             |              |                    |           |                |            | 49471<br>58262          |                  |                 |   |
|    |             |              |                    |           | 09 00 00       | 05 /:      | 0 82 82                 |                  |                 |   |
|    |             | Which fr     | equency ch         | art accur | ately represe  | nts the c  | lata?                   |                  |                 |   |
|    |             |              | . ,                |           | , ,            |            |                         |                  |                 |   |
|    |             |              | f Candy<br>rs Sold | Frequency | ,              |            | # of Candy<br>Bars Sold | Frequency        |                 |   |
|    |             |              | 0-49               | 1         |                |            | 40-49                   | 0                |                 |   |
|    |             |              | 0-59               | 1         | $\neg$         |            | 50-59                   | 1                |                 |   |
|    |             |              | 0-69               | 3         |                |            | 60-69                   | 5                |                 |   |
|    |             | 7            | 0-79               | 3         |                |            | 70-79                   | 4                |                 |   |
|    |             | 8            | 0-89               | 5         |                |            | 80-89                   | 3                |                 |   |
|    |             | ş            | 0—99               | 0         |                |            | 90—99                   | 1                |                 |   |
|    |             | 10           | 0—109              | 1         |                |            | 100-109                 | 1                |                 |   |
|    |             |              | A                  |           |                |            |                         | c                |                 |   |
|    |             |              |                    |           |                |            |                         | -                |                 |   |
|    |             |              | f Candy<br>rs Sold | Frequency | /              |            | # of Candy<br>Bars Sold | Frequency        |                 |   |
|    |             | 4            | 0-49               | 2         | _              |            | 4049                    | 1                |                 |   |
|    |             | 5            | 60-59              | 0         |                |            | 50-59                   | 0                |                 |   |
|    |             |              | 0-69               | 5         |                |            | 60-69                   | 5                |                 |   |
|    |             |              | 0-79               | 3         | _              |            | 70-79                   | 3                |                 |   |
|    |             |              | 80-89              | 2         | _              |            | 80-89                   | 3                |                 |   |
|    |             |              | 0-99               | 1         |                |            | 90-99                   | 1                |                 |   |
|    |             | 10           | 0–109              | 1         |                | l          | 100-109                 | 1                |                 |   |
|    |             |              | В                  |           |                |            |                         | D                |                 |   |
|    |             | 1            | 1                  |           |                |            |                         |                  |                 | _ |
|    | Item        | 3267460      | Correc             |           | P-Value        | .59        | Equate                  | ed Rasch Valu    | ue 0.5332       |   |
| 19 | Number      |              | Answe              |           |                |            |                         |                  |                 | _ |
|    | 2003 Mather | natics Stand | ard Align          | ment is   | Strand 3 –     | Conce      | ept <b>3</b> – Perf     | formance Obj     | ective <b>1</b> |   |
|    |             |              |                    |           |                |            |                         |                  |                 |   |
|    |             | If $x = 4$ a | nd $y = -$         | 1, what   | is the value   | e of the   | expression              | below?           |                 |   |
|    |             |              |                    |           |                | 24         | - 8y                    |                  |                 |   |
|    |             |              |                    |           |                | √∠X        | - oy                    |                  |                 |   |
|    |             | <b>A</b> 0   |                    |           |                |            |                         |                  |                 |   |
|    |             |              |                    |           |                |            |                         |                  |                 |   |
|    |             | <b>B</b> √5  |                    |           |                |            |                         |                  |                 |   |
|    |             | <b>C</b> √14 |                    |           |                |            |                         |                  |                 |   |
|    |             | -            |                    |           |                |            |                         |                  |                 |   |
|    |             | <b>D</b> 4   |                    |           |                |            |                         |                  |                 |   |
|    |             |              |                    |           |                |            |                         |                  |                 |   |

| · · · · · · |  |  | 7 111/16                                 | J 1010  |              | tereasea r   |                                 | · · · · · · · · · · · · · · · · · · · |  |  |  |
|-------------|--|--|--|---------|--------------|--------------|---------------------------------|---------------------------------------|--|--|--|
|             | Item   | 3140790  | Correct                                  | А       | P-Value      | .53          | Equated Rasch Value             | 1.1114                                |  |  |  |
| 20          | Number   |  | Answer                                   |         |              |              |                                 |                                       |  |  |  |
|             | 2003 Mathem  | natics Standa  | ard Alignm                               | ent is  | Strand 2 –   | Concept      | 2 – Performance Object          | ive <b>6</b>                          |  |  |  |
|             |  | Which of t   | he following                             | g is ar | n example of | independe    | ent events?                     |                                       |  |  |  |
|             | <ul> <li>A flipping a fair coin and rolling a six-sided number cube</li> <li>B selecting the order in which one picture will be taken of each of four friends by drawing their names out of a hat</li> <li>C selecting the order in which each member of a history class will present a speech to the rest of the class</li> </ul> |  |  |         |              |              |                                 |                                       |  |  |  |
|             |  |  |  |         |              |              |                                 |                                       |  |  |  |
|             |  |  |  |         |              |              |                                 |                                       |  |  |  |
|             |  | D selectin   |  |         |              | of candy, on | e piece at a time, from a bag o | containing                            |  |  |  |
| 21          | Item<br>Number   | 2019600  | Correct<br>Answer                        | С       | P-Value      | .52          | Equated Rasch Value             | 0.9039                                |  |  |  |
| 41          |  | natics Standa  |  | ent is  | Strand 3 –   | Concept      | <b>3</b> – Performance Object   | ive <b>10</b>                         |  |  |  |
|             |  | <b>A</b> $y = -4$<br><b>B</b> $y = -4$<br><b>C</b> $y = -4$<br><b>D</b> $y = -4$ | $\frac{2}{3}x - 3$<br>$\frac{3}{2}x - 3$ |         |              |              |                                 |                                       |  |  |  |
|             | Item   | 3140793  | Correct                                  | D       | P-Value      | .5789        | Equated Rasch Value             | 0.4578                                |  |  |  |
| 22          | Number   |  | Answer                                   |         |              |              |                                 |                                       |  |  |  |
|             | 2003 Mathem  | natics Standa  | ard Alignm                               | ent is  | Strand $2-$  | Concept      | 3 – Performance Object          | ive <b>1</b>                          |  |  |  |
|             | The class wants to order pizza for a<br>study session. There are 3 different<br>vegetable toppings, 3 different<br>meat toppings, and 2 types of crust<br>available. How many different pizzas<br>are possible with 1 vegetable topping,<br>1 meat topping, and 1 type of crust?   |  |  |         |              |              |                                 |                                       |  |  |  |
|             |  | <b>A</b> 6   |  |         |              |              |                                 |                                       |  |  |  |
|             |  | <b>B</b> 8   |  |         |              |              |                                 |                                       |  |  |  |
|             |  | <b>C</b> 12  |  |         |              |              |                                 |                                       |  |  |  |
|             |  | <b>D</b> 18  |  |         |              |              |                                 |                                       |  |  |  |
|             |  |  |  |         |              |              |                                 |                                       |  |  |  |

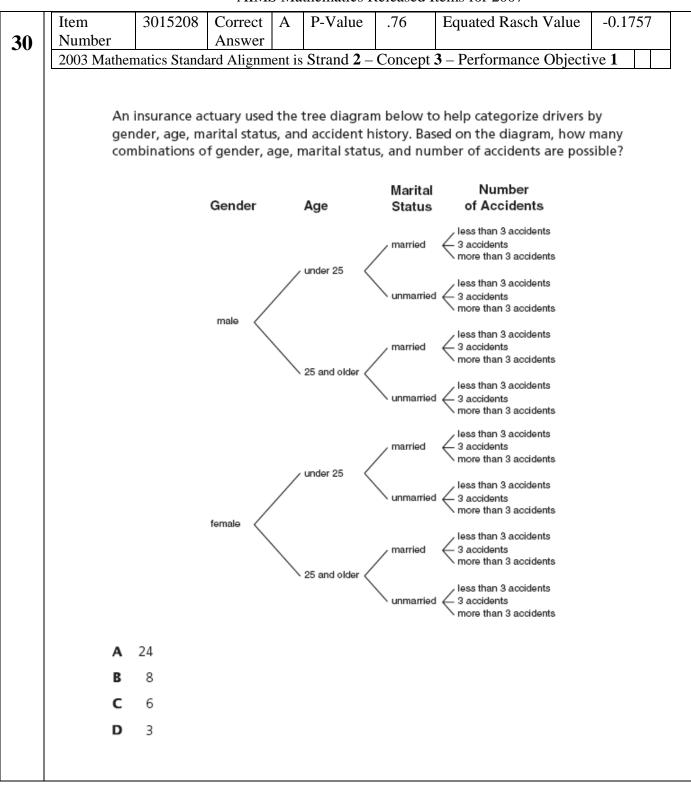


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|    |  | 1                            |                | r       |            | T       |                        | Т            |  |  |  |  |
|----|--|------------------------------|----------------|---------|------------|---------|------------------------|--------------|--|--|--|--|
|    | Item   | 3140752                      | Correct        | C       | P-Value    | .8149   | Equated Rasch Value    | -1.0988      |  |  |  |  |
| 25 | Number   |                              | Answer         |         |            |         |                        |              |  |  |  |  |
|    | 2003 Mather  | natics Standa                | ard Alignm     | ent is  | Strand 3 – | Concept | 3 – Performance Object | ive <b>5</b> |  |  |  |  |
|    |  |                              |                |         |            |         |                        |              |  |  |  |  |
|    | Maria took a taxicab from her home<br>to the theater downtown. The taxicab<br>company charges a flat fee of \$5.00<br>plus \$0.25 per mile. Which equation |                              |                |         |            |         |                        |              |  |  |  |  |
|    |  |                              |                |         |            |         |                        |              |  |  |  |  |
|    |  |                              |                |         |            |         |                        |              |  |  |  |  |
|    | represents C, the total cost of her ride,  |                              |                |         |            |         |                        |              |  |  |  |  |
|    | in terms of <i>m</i> , the length of the trip<br>in miles?   |                              |                |         |            |         |                        |              |  |  |  |  |
|    |  |                              |                |         |            |         |                        |              |  |  |  |  |
|    |  | <b>A</b> $C = 0$ .           | 25m            |         |            |         |                        |              |  |  |  |  |
|    |  | <b>B</b> C = 5.              | 25m            |         |            |         |                        |              |  |  |  |  |
|    |  | <b>C</b> C = 5               | + 0.25m        |         |            |         |                        |              |  |  |  |  |
|    |  | <b>D</b> C = 5/              | m + 0.25       |         |            |         |                        |              |  |  |  |  |
|    |  |                              |                |         |            |         |                        |              |  |  |  |  |
|    | Item   | 3140753                      | Correct        | А       | P-Value    | .71     | Equated Rasch Value    | -0.0215      |  |  |  |  |
| 26 | Number   |                              | Answer         |         |            |         | •                      |              |  |  |  |  |
|    | 2003 Mather  | natics Standa                | ard Alignm     | ent is  | Strand 3 – | Concept | 3 – Performance Object | ive 8        |  |  |  |  |
|    |  |                              |                |         |            |         |                        |              |  |  |  |  |
|    | What is the solution to the  |                              |                |         |            |         |                        |              |  |  |  |  |
|    |  | equation                     | below?         |         |            |         |                        |              |  |  |  |  |
|    |  |                              | 3(x - 4) =     | = 5v -  | 6          |         |                        |              |  |  |  |  |
|    |  |                              | J(x - 4) =     | - 37    | 0          |         |                        |              |  |  |  |  |
|    |  | <b>A</b> x = -               | 2              |         |            |         |                        |              |  |  |  |  |
|    |  | $\mathbf{A}  \mathbf{x} = -$ | -3             |         |            |         |                        |              |  |  |  |  |
|    |  | <b>B</b> $x = \frac{3}{4}$   | <u>}</u>       |         |            |         |                        |              |  |  |  |  |
|    |  | 4                            | ł              |         |            |         |                        |              |  |  |  |  |
|    |  | <b>C</b> x = 1               |                |         |            |         |                        |              |  |  |  |  |
|    |  |                              |                |         |            |         |                        |              |  |  |  |  |
|    |  | <b>D</b> $x = 9$             |                |         |            |         |                        |              |  |  |  |  |
|    | Item   | 3140797                      | Correct        | С       | P-Value    | .7526   | Equated Rasch Value    | -0.5855      |  |  |  |  |
| 27 | Number   | 5110777                      | Answer         | Ũ       | i varao    |         | Equated Rusen value    | 0.0000       |  |  |  |  |
| 21 |  | natics Standa                |                | ent is  | Strand 3 – | Concept | 1 – Performance Object | ive 2        |  |  |  |  |
|    | 2002 11141101  | nutres stand                 | a a i ingini   |         | Strande    | concept |                        |              |  |  |  |  |
|    |  | The seque                    | ence below i   | s defir | ned by     |         |                        |              |  |  |  |  |
|    |  | starting v                   | vith 1, then a | adding  | 2 to the   |         |                        |              |  |  |  |  |
|    | immediately preceding term. What is<br>the 10th term of the sequence if the<br>pattern continues?  |                              |                |         |            |         |                        |              |  |  |  |  |
|    |  |                              |                |         |            |         |                        |              |  |  |  |  |
|    |  | patterno                     | ontinues:      |         |            |         |                        |              |  |  |  |  |
|    |  |                              | 1, 3, 5, 7,    | 9,      |            |         |                        |              |  |  |  |  |
|    |  | <b>A</b> 9                   |                |         |            |         |                        |              |  |  |  |  |
|    |  | <b>B</b> 11                  |                |         |            |         |                        |              |  |  |  |  |
|    |  |                              |                |         |            |         |                        |              |  |  |  |  |
|    |  | C 19 D 21                    |                |         |            |         |                        |              |  |  |  |  |
|    |  |                              |                |         |            |         |                        |              |  |  |  |  |

|    | Item  | 3267472                   | Correct                 | А              | P-Value           | .55     | Equated Rasch Value     | 0.8311 |  |  |  |  |
|----|---|---------------------------|-------------------------|----------------|-------------------|---------|-------------------------|--------|--|--|--|--|
| 28 | Number  | nation Stand              | Answer                  | ontic          | Strand 3          | Concept | 2 Parformanco Obiacti   | vo 11  |  |  |  |  |
|    | 2003 Mathematics Standard Alignment is Strand <b>3</b> – Concept <b>3</b> – Performance Objective <b>11</b> |                           |                         |                |                   |         |                         |        |  |  |  |  |
|    | What is the solution to the equation  |                           |                         |                |                   |         |                         |        |  |  |  |  |
|    | below?  |                           |                         |                |                   |         |                         |        |  |  |  |  |
|    | $\frac{x}{4} = \frac{x+1}{3}$   |                           |                         |                |                   |         |                         |        |  |  |  |  |
|    | $\mathbf{A}  x = -4$  |                           |                         |                |                   |         |                         |        |  |  |  |  |
|    |   | <b>B</b> x =              | 1                       |                |                   |         |                         |        |  |  |  |  |
|    |   | D X -                     | -1                      |                |                   |         |                         |        |  |  |  |  |
|    |   | <b>C</b> <i>x</i> =       |                         |                |                   |         |                         |        |  |  |  |  |
|    |   | <b>D</b> x =              | $\frac{4}{7}$           |                |                   |         |                         |        |  |  |  |  |
|    |   |                           |                         |                |                   |         |                         |        |  |  |  |  |
|    |   |                           |                         |                |                   |         |                         |        |  |  |  |  |
|    | Item  | 3140838                   | Correct                 | С              | P-Value           | .6001   | Equated Rasch Value     | 0.3516 |  |  |  |  |
| 29 | Number<br>2003 Mathen   | natics Stand              | Answer<br>ard Alignm    | ent is         | Strand <b>1</b> – | Concept | 1 – Performance Objecti | ive 2  |  |  |  |  |
|    | 2003 Mathem   | liuties Stand             | ard / mgmm              |                |                   | concept |                         |        |  |  |  |  |
|    |   |                           | property o<br>ted below |                | al numbers        | is      |                         |        |  |  |  |  |
|    |   | mustra                    | ted below               | ſ              |                   |         |                         |        |  |  |  |  |
|    |   |                           | x(y + z                 | <u>z</u> ) = 2 | xy + xz           |         |                         |        |  |  |  |  |
|    |   | A Ass                     | sociative Pre           | opert          | ty of Additic     | n       |                         |        |  |  |  |  |
|    |   | <b>B</b> Ass              | sociative Pro           | opert          | ty of Multipl     | ication |                         |        |  |  |  |  |
|    |   | <b>C</b> Dis              | tributive Pr            | oper           | ty                |         |                         |        |  |  |  |  |
|    |   | D Commutative Property of |                         |                |                   |         |                         |        |  |  |  |  |
|    |   | MU                        | Iltiplication           |                |                   |         |                         |        |  |  |  |  |
|    |   |                           |                         |                |                   |         |                         |        |  |  |  |  |
|    |   |                           |                         |                |                   |         |                         |        |  |  |  |  |
|    |   |                           |                         |                |                   |         |                         |        |  |  |  |  |
|    |   |                           |                         |                |                   |         |                         |        |  |  |  |  |
|    |   |                           |                         |                |                   |         |                         |        |  |  |  |  |
|    |   |                           |                         |                |                   |         |                         |        |  |  |  |  |

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