TAKS

**Texas Assessment
of Knowledge and Skills**

MATHEMATICS
Exit Level

2008 Released Items

1 Which of the following does not represent a function?

A $\{(-6, 4), (3, -5), (0, -2), (-1, -1)\}$

B $y = 3x^2 - 2$

C

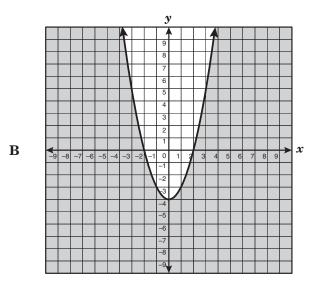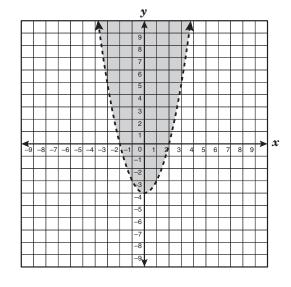| x	y
−2	15
6	9
−5	−10
−2	−6
3	4

D $y = \dfrac{4x - 3}{5}$
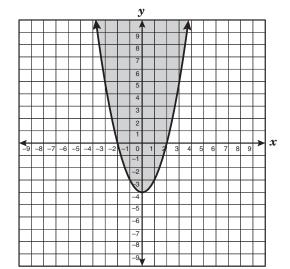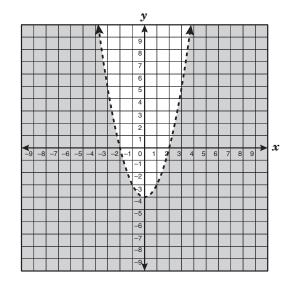
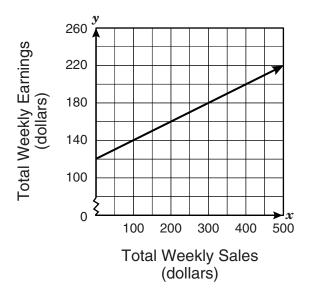**2** Which graph best represents the inequality $y \geq x^2 - 4$?

A

C

B

D

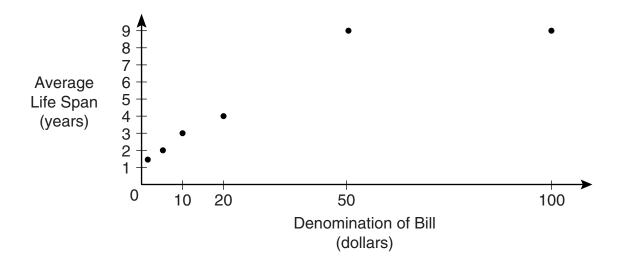**3** The graph below shows John's weekly earnings as a function of his total weekly merchandise sales.

John's Weekly Earnings

Total Weekly Sales
(dollars)

Which is closest to John's total earnings if he sells $650 of merchandise in one week?

A $220

B $260

C $240

D $250

1   In the United States, currency is removed from circulation when it wears out. The scatterplot shows the average life span of different denominations of U.S. currency according to the U.S. Federal Reserve System.
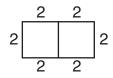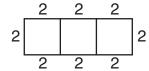

Which is a correct conclusion based on the data in this scatterplot?

A   The data represent a linear function.

B   The independent variable is the average life span.

C   The bills of smaller denomination have a longer life span.

D   The average life span of a bill depends on its denomination.

2   Which algebraic expression is equivalent to the phrase "5 less than the sum of x and y"?

A $(x + y) - 5$

B $(x - y) + 5$

C $5 - (x + y)$

D $5 - x + y$

3   The squares below are arranged in a sequence to produce a geometric pattern.

Which expression can be used to determine the perimeter of a composite figure made of s squares arranged in this pattern?

A $8s$

B $8s - 4$

C $4s + 4$

D $4s$

4   Simplify the algebraic expression $2(5x + 4) + 3x - (7 - x)$.

A $9x - 1$

B $11x - 1$

C $12x + 1$

D $14x + 1$

1 Which of the following tables best represents a linear function with a rate of change of $-\dfrac{4}{5}$?

A

x	y
−6	6.5
−4	4
−2	1.5
6	−8.5
10	−13.5

C

x	y
−4	−2
−2	0.5
1	4.25
4	8
6	10.5

B
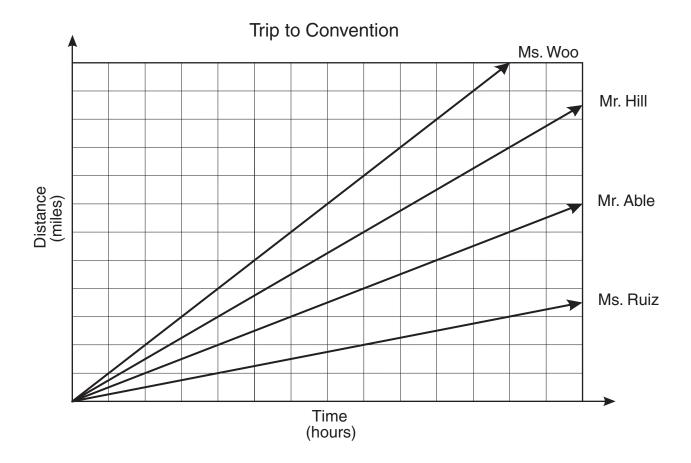
x	y
−3	5.4
−1	3.8
3	0.6
5	−1
8	−3.4

D

x	y
−7	−10.6
−4	−8.2
−1	−5.8
3	−2.6
5	−1

2 Some employees of Ace Corporation left their office building and drove separately on the same road to a convention. The graph shows the distance traveled by each employee after 5 hours of nonstop driving at 4 different speeds.

Which employee drove at the slowest rate to the convention?

A Mr. Able

B Ms. Ruiz

C Ms. Woo

D Mr. Hill

3   Find the points at which the graph of the equation $-4y = 15 - 5x$ crosses the x-axis and the y-axis.

    A $(0, -3.75)$ and $(3, 0)$

    B $(0, 3)$ and $(0, -3.75)$

    C $(-3.75, 0)$ and $(0, 3)$

    D $(3, 0)$ and $(-3.75, 0)$

1 Mr. Benítez wants to buy a carton of oranges for $32.50. Each orange weighs about 4.6 ounces and will be packed into a carton that holds between 18 and 22 pounds. What is the greatest number of oranges that the carton can hold without its weight limit being exceeded?

A 76

B 62

C 82

D 101

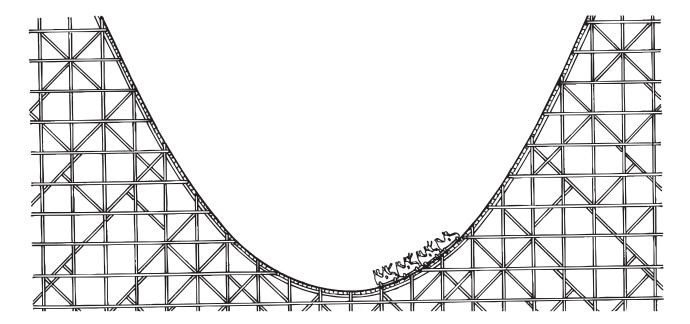**2** Which is the solution to this pair of linear equations?

$$5y - 2x = 6$$

$$3x - 2y = 13$$

A $(3, -2)$

B $(5, -2)$

C $(7, 4)$

D $(8, -4)$

3 Kelly will enclose her rectangular tomato garden with 32 feet of fencing material. She wants the length of the garden to be at least three times the width. What is the minimum length that will meet Kelly's conditions?

A 24 ft

B 12 ft

C 8 ft

D 4 ft

1   How does the graph of $y = 3x^2$ differ from the graph of $y = -x^2$?

   A   The graph of $y = 3x^2$ opens upward and is narrower.

   B   The graph of $y = 3x^2$ opens upward and is wider.

   C   The graph of $y = 3x^2$ opens downward and is narrower.

   D   The graph of $y = 3x^2$ opens downward and is wider.

2 Which inequality describes the value of a in the graph of $y = ax^2 + bx + c$ if this equation models the height of the section of the roller coaster shown below?

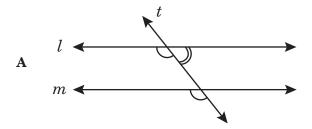**A** $-1 < a < 0$

B $a < -1$

C $a > 0$

D $a < 0$

3 What are the zeros of the function
$f(x) = -4(x - 3)(x + 5)$?

A -12 and 20

B -5 and 3

C -4 and -5

D -3 and 5
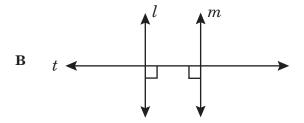
4 Which expression is equivalent to
$$\frac{-(3x^2y)^2(4xy^2)}{6xy^3}?$$
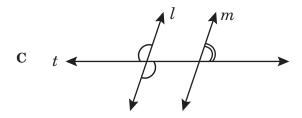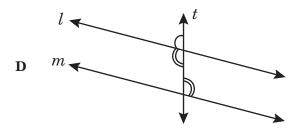
A $-6x^4y$

B $6x^2y$

C $-2x^2$

D $2x^4y$

1 Which of the following does not necessarily represent line l parallel to line m and intersected by line t?

A

B

C

D

2 If a circle were divided into 4, 6, or 9 equal sectors, which of the following shows the respective measures of the central angles of the sectors?

    A   90°, 60°, 40°

    B   45°, 30°, 20°

    C   90°, 60°, 45°

    D   180°, 90°, 60°

3 $\triangle KMS$ has a right angle at M. The measure of $\angle MSK = 60°$, and $KS = 17$ centimeters. Which is closest to the length of $\overline{KM}$?
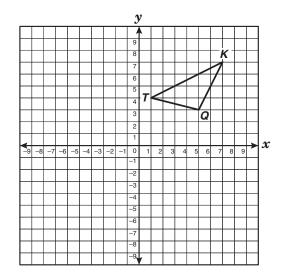
    A   9 cm
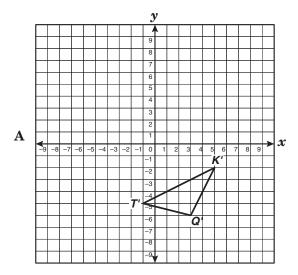
    B   12 cm

    C   10 cm

    D   15 cm

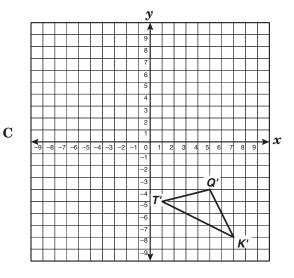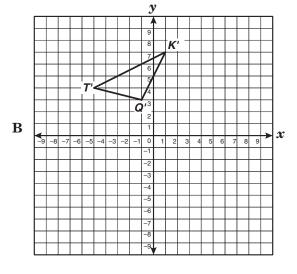**4** △*KQT* is graphed on the grid.
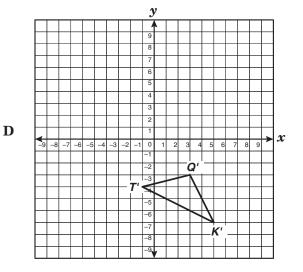
Which of the following best represents an image of △*KQT* translated 2 units to the left and reflected across the *x*-axis?

A

C

B

D
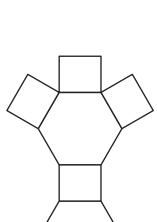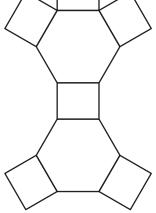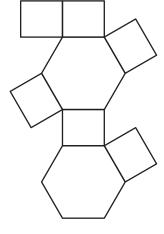
1   Which net best represents the prism shown below?

A

C

B

D

2 The front, side, and top views of a solid built of cubes are shown below.
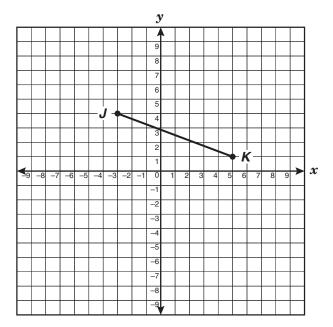
Front   Side   Top

How many cubes were needed to construct this solid?

A 13

B 14

C 15

D 21
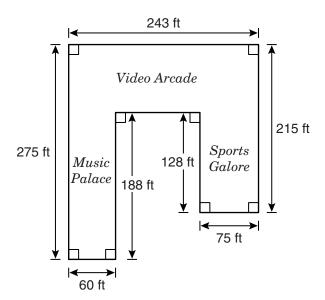
3 Line segment *JK* is graphed on the coordinate grid.

Which of the following best represents the slope of a line perpendicular to segment *JK*?

A $-\dfrac{3}{8}$

B $\dfrac{8}{3}$

C $\dfrac{3}{8}$
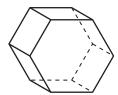
D $-\dfrac{8}{3}$

4 $\triangle ABC$ has vertices at $A\,(0, 0)$, $B\,(9, 12)$, and $C\,(25, 0)$. What is the distance between the midpoint of $\overline{AB}$ and the midpoint of $\overline{AC}$?

A 7.5 units

B 10 units

C 15 units

D 20 units
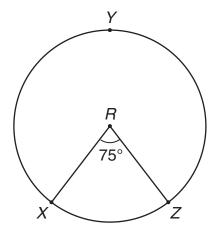
1 The dimensions of 3 connected stores are shown below.

243 ft

Video Arcade

215 ft

275 ft

Music Palace

128 ft

Sports Galore

188 ft

75 ft

60 ft

How many square feet of floor space are used by the 3 stores?

A 9,600 ft^2

B 11,280 ft^2

C 21,141 ft^2

D 42,021 ft^2
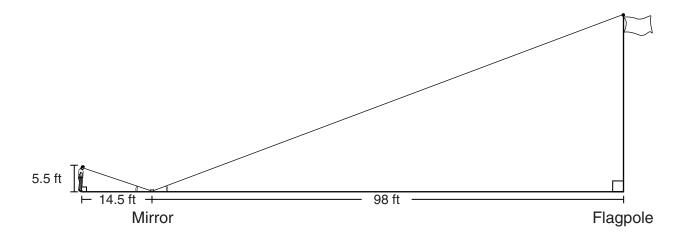
2 Use the ruler on the Mathematics Chart to measure the radius of the circle to the nearest tenth of a centimeter.

Y

R

75°

X   Z

Which is closest to the length of $\overparen{XYZ}$?

A 3 cm

B 4 cm

C 12 cm

D 16 cm
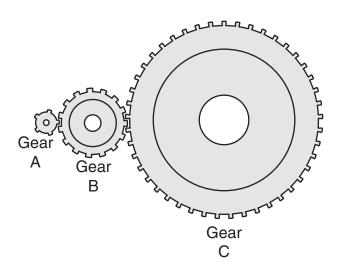
3 Jeff used the indirect method of measurement to find the height of a flagpole. He first placed a mirror on the ground 98 feet from the flagpole. The dimensions Jeff measured are shown in the drawing.

5.5 ft

⊢ 14.5 ft ⊣   98 ft

Mirror   Flagpole

What is the approximate height of the flagpole?

A 20.5 ft

B 37.2 ft

C 258.4 ft

D 618.8 ft

1 The drawing below shows three gears.

Gear A

Gear B

Gear C

The ratio of the rotation rate of Gear A to Gear B is 3:1, which is equal to the rotation rate of Gear B to Gear C. If Gear A rotates at a rate of 270 cycles per minute, what is the rotation rate of Gear C?
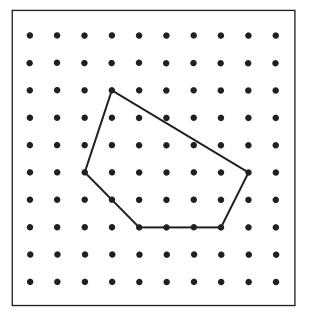
A 30 cycles per minute

B 90 cycles per minute

C 810 cycles per minute

D 2430 cycles per minute

2 Nikolai has a jar filled with 120 marbles. He has 72 red marbles, 17 blue marbles, 13 green marbles, and 18 purple marbles. What is the probability that he will randomly select a blue marble, without replacement, and then a purple marble from the jar?

A $\dfrac{7}{24}$

B $\dfrac{3}{140}$

C $\dfrac{17}{800}$

D $\dfrac{13}{840}$

3 Patti is on the varsity softball team. So far this season she has 55 hits in 82 times at bat. Based on this information, which is most likely to be the total number of hits Patti will have for the season if she bats 15 more times?

A 10

B 22

C 65

D 70

1 A 14-foot ladder is leaning against a house so that its top touches the top of the wall. The bottom of the ladder is 8 feet away from the wall. Which of these can be used to find the height of the wall?

A In a right triangle with a 14-foot leg and an 8-foot leg, find the length of the hypotenuse.

B In a right triangle with a 14-foot leg and an 8-foot leg, find the altitude to the hypotenuse.

C In a right triangle with a 14-foot hypotenuse and an 8-foot leg, find the length of the other leg.

D In a right triangle with a 14-foot hypotenuse and an 8-foot leg, find the altitude to the hypotenuse.

2 Mr. Franco is making a triangular cement slab and needs to set boards before he can pour the cement. He has already set two boards that are 5 feet and 8 feet in length. What is a reasonable range for the length of the third board that Mr. Franco could set for this triangular cement slab?

A The third board needs to be greater than 3 feet in length.

B The third board can be between 3 feet and 13 feet in length.

C The third board needs to be less than 13 feet in length.

D The third board can be 3 feet or 13 feet in length.

3 If the horizontal or vertical distance between adjacent pegs in the geoboard shown below is 1 unit, which is closest to the area of the polygon modeled on the geoboard?

A 23 units^2

B 18 units^2

C 15 units^2

D 21 units^2

4 $\triangle XYZ$ has a right angle at point Y. Point W is between points X and Z. $\overline{WY}$ is perpendicular to $\overline{XZ}$. According to this information, which of the following is true?

A $\triangle ZYW \sim \triangle XYZ$

B $\triangle YZW \sim \triangle XYZ$

C $\triangle XWY \sim \triangle XYZ$

D $\triangle WYZ \sim \triangle XYZ$

Item Number	Student Expectation	Correct Answer
OBJECTIVE 1		
1	A.1 (B)	C
2	A.1 (D)	A
3	A.1 (E)	D
OBJECTIVE 2		
1	A.2 (D)	D
2	A.3 (A)	A
3	A.3 (B)	C
4	A.4 (B)	D
OBJECTIVE 3		
1	A.6 (A)	B
2	A.6 (B)	B
3	A.6 (E)	A
OBJECTIVE 4		
1	A.7 (C)	A
2	A.8 (B)	C
3	A.8 (C)	B
OBJECTIVE 5		
1	A.9 (B)	A
2	A.9 (D)	C
3	A.10 (B)	B
4	A.11 (A)	A
OBJECTIVE 6		
1	G.4 (A)	C
2	G.5 (B)	A
3	G.5 (D)	D
4	G.10 (A)	D
OBJECTIVE 7		
1	G.6 (B)	D
2	G.6 (C)	A
3	G.7 (B)	B
4	G.7 (C)	B
OBJECTIVE 8		
1	G.8 (A)	D
2	G.8 (B)	C*
3	G.11 (B)	B
OBJECTIVE 9		
1	8.3 (B)	A
2	8.11 (A)	B
3	8.11 (B)	C

Item Number	Student Expectation	Correct Answer
OBJECTIVE 10		
1	8.14 (A)	C
2	8.14 (B)	B
3	8.14 (C)	B
4	8.16 (B)	C

[*] When printing a ruler item, make sure that the Print Menu is set to print the page at 100% to ensure that the art reflects the intended measurement.