# STAR Test Sample Questions
## 7th Grade Mathematics

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# STAR Test Sample Questions
## 7th Grade Mathematics

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# Standardized Testing and Reporting - STAR
## Grade 7: Mathematics
*Algebra and Functions - Multistep Problems, Graphing, and Functions (Performance Level: Advanced) – Question 01*

**Which best represents the graph of** $y = 2x - 5$ **?**
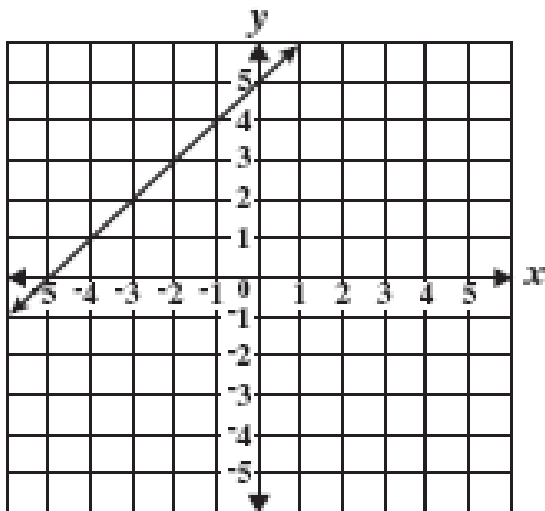


A



C



B



D

# Grade 7: Mathematics

*Algebra and Functions - Multistep Problems, Graphing, and Functions (Performance Level: Advanced) – Question 02*

**What is the slope of this line?**



A  $\dfrac{1}{2}$

B  $\dfrac{3}{4}$

C  $1$

D  $\dfrac{4}{3}$

# Grade 7: Mathematics

*Algebra and Functions - Multistep Problems, Graphing, and Functions (Performance Level: Advanced) – Question 03*

Juanita earns $36 for 3 hours of work. At that rate, **how long would she have to work to earn $720?**

A 12 hours

B 20 hours

C 60 hours

D 140 hours

# Grade 7: Mathematics

*Algebra and Functions - Multistep Problems, Graphing, and Functions (Performance Level: Proficient) – Question 01*

Bananas are on sale at the price of 3 pounds for $1.00.

**Which graph shows the relationship between the number of pounds of bananas bought and the total cost?**

A

B
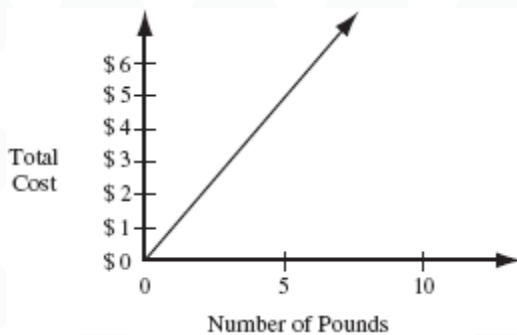
C
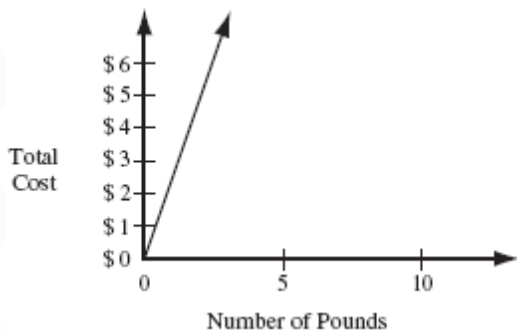
D
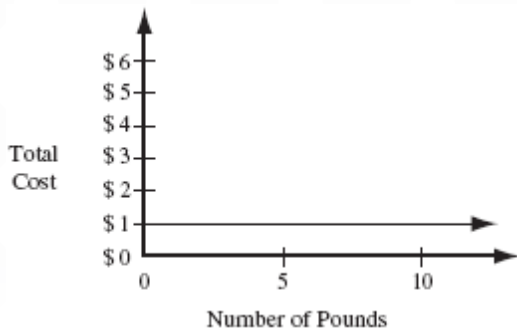
# Grade 7: Mathematics

*Algebra and Functions - Multistep Problems, Graphing, and Functions*
*(Performance Level: Proficient) – Question 02*

**What value of x makes the equation below true?**

$$\frac{x}{9} + 6 = 8$$

A 2

B 18

C 66

D 126

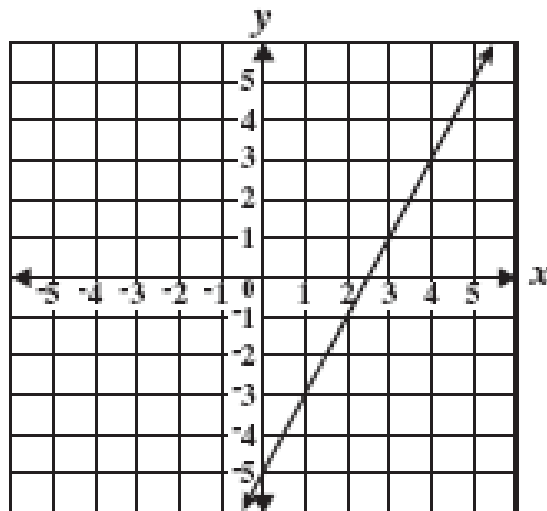# Grade 7: Mathematics

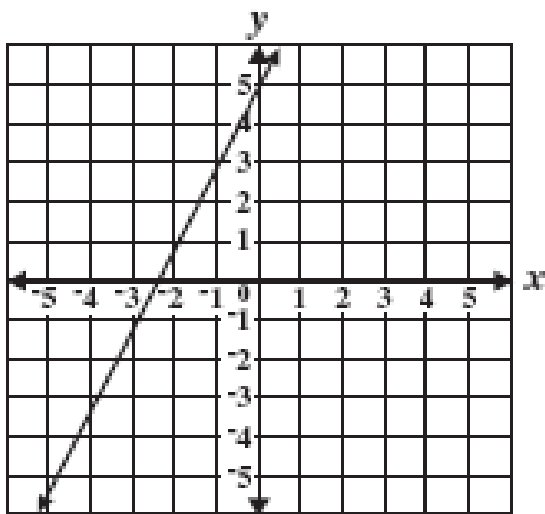*Algebra and Functions - Multistep Problems, Graphing, and Functions (Performance Level: Proficient) – Question 03*

**What is the value of x if** $-3x + 2 = -7$?
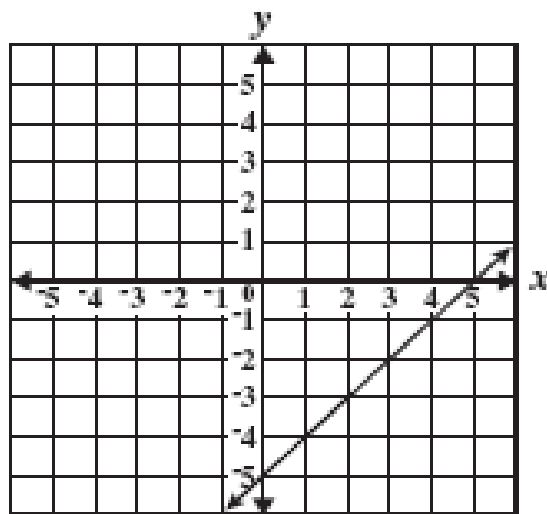
A $x = -6$
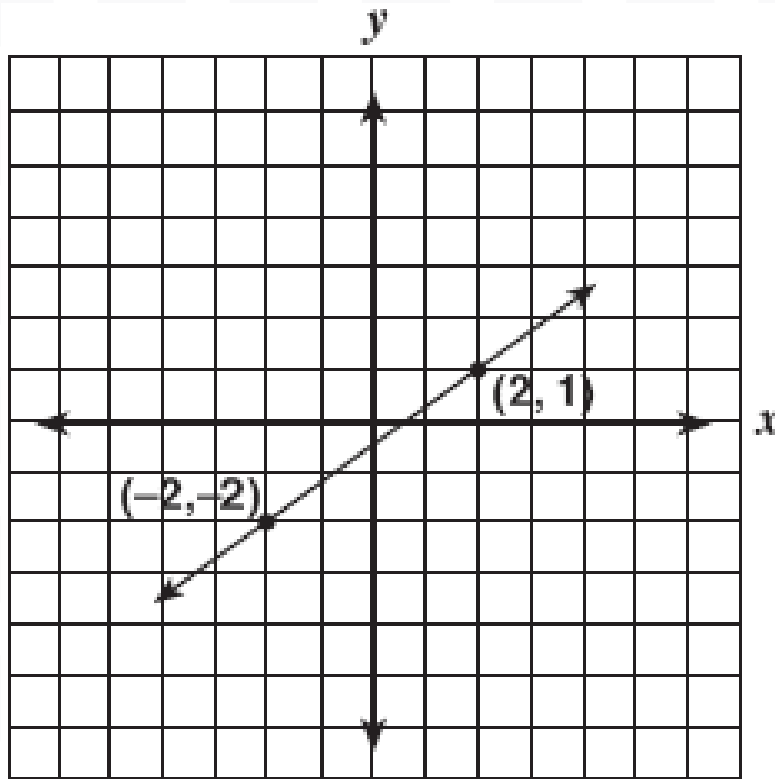
B $x = -3$

C $x = 3$

D $x = 6$

# Grade 7: Mathematics
## Algebra and Functions - Multistep Problems, Graphing, and Functions
## (Performance Level: Proficient) – Question 04

Marisa's car gets an average of 28 miles per gallon of gas. She plans to drive 200 miles today and 220 miles tomorrow.

**How many gallons of gas should she expect to use in all?**
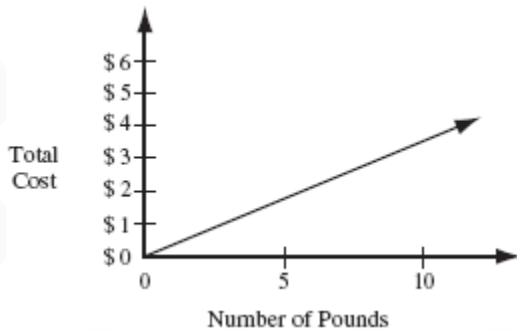
A 15 gallons

B 28 gallons

C 56 gallons

D 67 gallons

# Grade 7: Mathematics
*Algebra and Functions - Multistep Problems, Graphing, and Functions (Performance Level: Basic) – Question 01*

Joan needs $60 for a class trip. She has $32. She can earn $4 an hour mowing lawns. If the equation shows this relationship, **how many hours must Joan work to have the money she needs?**

$$4h + 32 = 60$$

A 7 hours

B 17 hours

C 23 hours

D 28 hours

# Grade 7: Mathematics

*Algebra and Functions - Multistep Problems, Graphing, and Functions (Performance Level: Basic) – Question 02*

**What value of x satisfies the equation** $4x + 2 = 22$?

A 3.5

B 5.0

C 6.0

D 7.5

# Grade 7: Mathematics

*Algebra and Functions - Quantitative Relationships and Evaluating Expressions
(Performance Level: Advanced) – Question 01*

**Which property is used in the equation below?**

$$12(x + 4) = 12x + 48$$

A Associative Property of Addition

B Commutative Property of Addition

C Distributive Property

D Reflexive Property

# Grade 7: Mathematics

*Algebra and Functions - Quantitative Relationships and Evaluating Expressions (Performance Level: Advanced) – Question 02*

Which equation shows the distributive property?

A $\quad 4(3+6)=12+24$

B $\quad (4+3)+6=6+(4+3)$

C $\quad (12+4)+0=12+4$

D $\quad (12+4)+6=12+(4+6)$

# Grade 7: Mathematics

*Algebra and Functions - Quantitative Relationships and Evaluating Expressions (Performance Level: Advanced) – Question 03*

**Which of the following equations illustrates the inverse property of multiplication?**

A $\quad 5 \times \dfrac{1}{5} = 1$

B $\quad 5 \times 1 = 5$

C $\quad 5 \times 0 = 0$

D $\quad 5 \times 5 = 25$

# Grade 7: Mathematics

*Algebra and Functions - Quantitative Relationships and Evaluating Expressions (Performance Level: Advanced) – Question 04*

**Which of the following is an example of an inequality?**

A $\quad 3n - 6$

B $\quad 4n > 9$

C $\quad 2 = n - 1$

D $\quad 5 + 0 = 5$

# Grade 7: Mathematics

*Algebra and Functions - Quantitative Relationships and Evaluating Expressions*
*(Performance Level: Advanced) – Question 05*

The table below shows the charges for renting and racing a go-cart.

## Grand Prix Go-Carts

| Number of Laps | 0 | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| Price (dollars) | 5 | 8 | 11 | 14 | 17 | 20 |

**Which graph best represents these prices?**

A
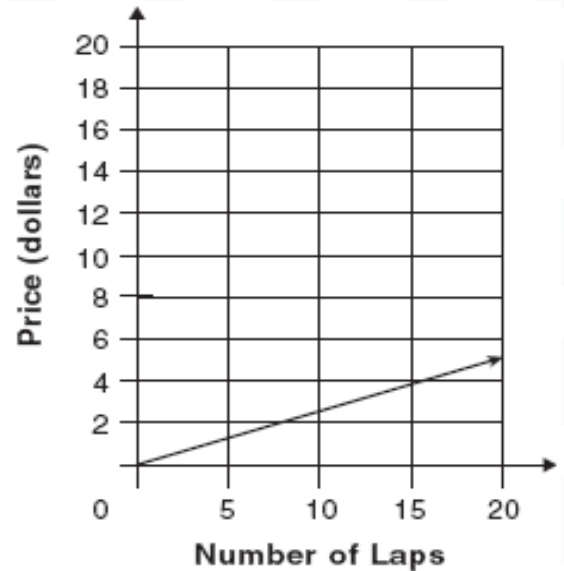
C
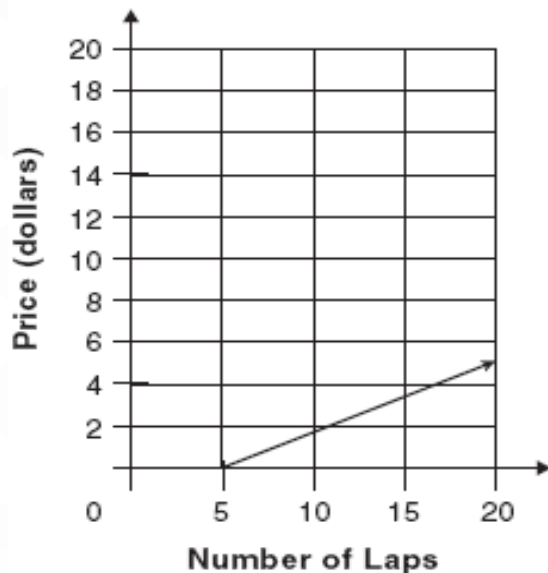
B
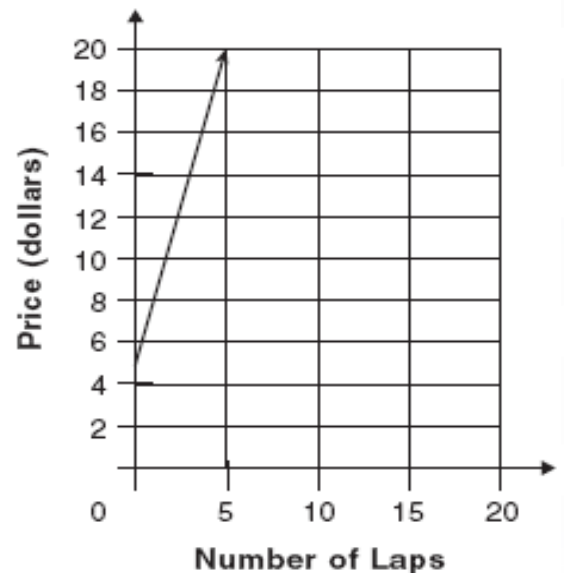
D

# Grade 7: Mathematics

*Algebra and Functions - Quantitative Relationships and Evaluating Expressions*
*(Performance Level: Advanced) – Question 06*

Which expression is equivalent to $\dfrac{8a^6}{2a^3}$ ?

A $\quad 6a^2$

B $\quad 6a^3$

C $\quad 4a^2$

D $\quad 4a^3$

# Grade 7: Mathematics

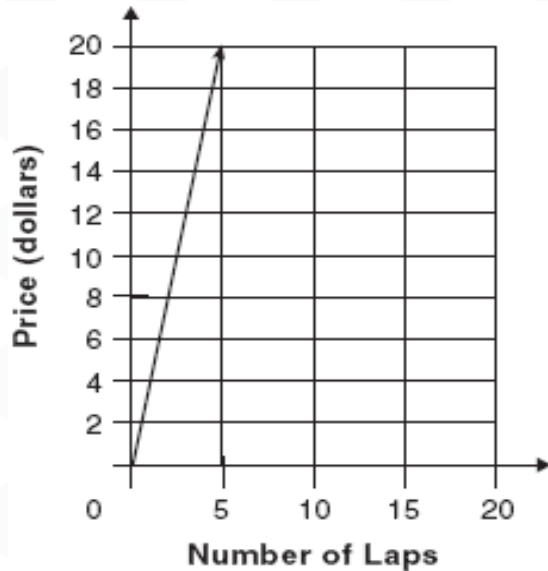*Algebra and Functions - Quantitative Relationships and Evaluating Expressions (Performance Level: Basic) – Question 01*

Which expression is equivalent to $3x - 3y?$

A 3xy

B $3(x-y)$

C $3x-y$

D $x-3y$

# Grade 7: Mathematics

*Algebra and Functions - Quantitative Relationships and Evaluating Expressions (Performance Level: Below Basic) – Question 01*

**Which expression below has the same value as** $x^3$ **?**

A 3x

B $x \div 3$

C $x \bullet x \bullet x$

D $3x \bullet 3x \bullet 3x$

# Grade 7: Mathematics

*Algebra and Functions - Quantitative Relationships and Evaluating Expressions (Performance Level: Below Basic) – Question 02*

The sum of a number (n) and 14 is 72.

**Which equation shows this relationship?**

A $\quad 14 + n = 72$

B $\quad 72n = 14$

C $\quad 14 - n = 72$

D $\quad 72 + n = 14$
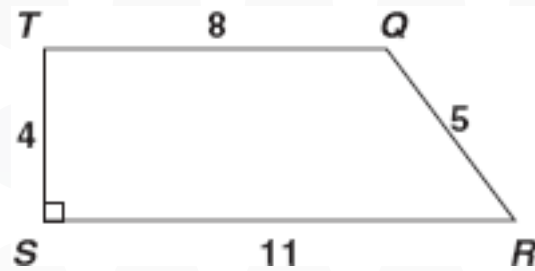
$$\left(A = \frac{1}{2}h\left(b_1 + b_2\right)\right)$$

**What is the area of trapezoid QRST in square units?**

A 22

B 27

C 38

D 48

# Grade 7: Mathematics

*Measurement and Geometry (Performance Level: Advanced) – Question 02*

Look at the coordinate grid below.
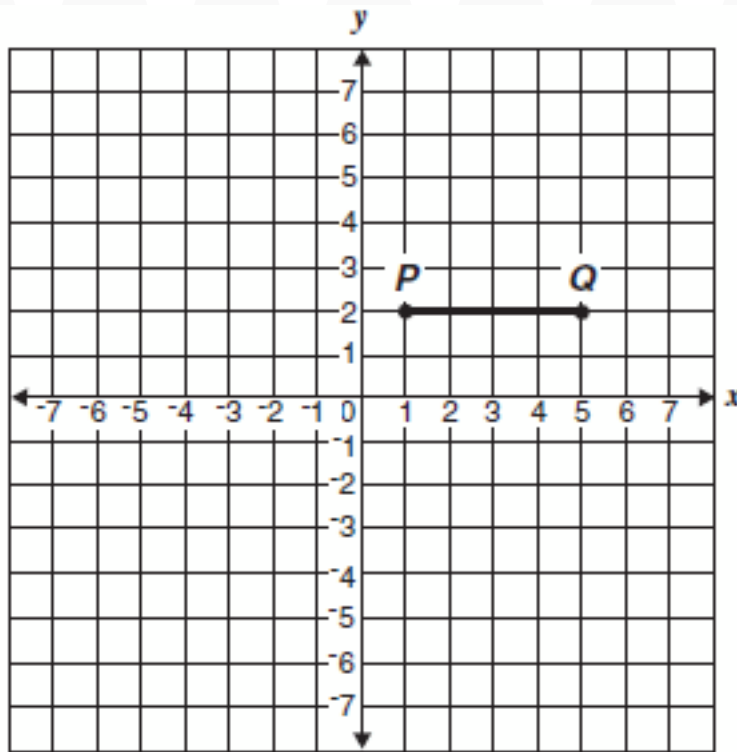


Points R and S will be added to the grid to form rectangle PQRS with an area of 20 square units.

**Which ordered pairs could be the coordinates of points R and S?**

A  $(5, -1)$ and $(1, -1)$

B  $(5, -2)$ and $(1, -2)$

C  $(5, -3)$ and $(1, -3)$

D  $(5, -4)$ and $(1, -4)$

# Grade 7: Mathematics
*Measurement and Geometry (Performance Level: Proficient) – Question 01*

The atmosphere normally exerts a pressure of about 15 pounds per square inch on surfaces at sea level.

**About how much pressure does the atmosphere exert on a surface 30 square inches in area?**

A 2 pounds

B 15 pounds

C 45 pounds

D 450 pounds

The chart below describes the speed of four desktop printers.

| Printer | Description |
|---|---|
| Roboprint | Prints 2 pages per second |
| Voltronn | Prints 1 page every 2 seconds |
| Vantek Plus | Prints 160 pages in 2 minutes |
| DLS Pro | Prints 100 pages per minute |

**Which printer is the fastest?**

A Roboprint

B Voltronn

C Vantek Plus

D DLS Pro

# Grade 7: Mathematics

*Measurement and Geometry (Performance Level: Proficient) – Question 03*

What is the volume of the rectangular solid shown below?



2 in.

3 in.

5 in.
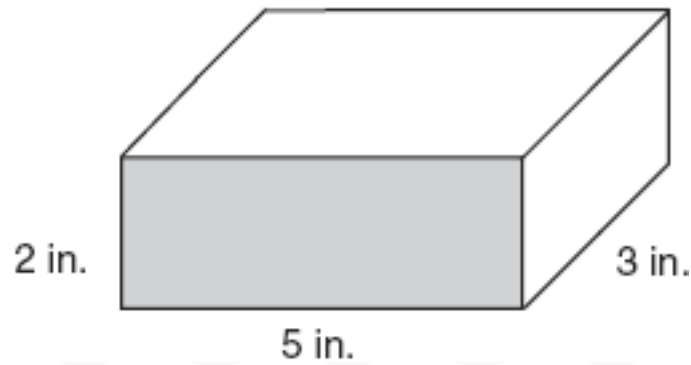
A 10 cubic inches

B 25 cubic inches

C 30 cubic inches

D 62 cubic inches

# Grade 7: Mathematics
## Measurement and Geometry (Performance Level: Proficient) – Question 04

In the figure below, D is the midpoint of $\overline{AC}$, and $\overline{BD}$ is perpendicular to $\overline{AC}$.
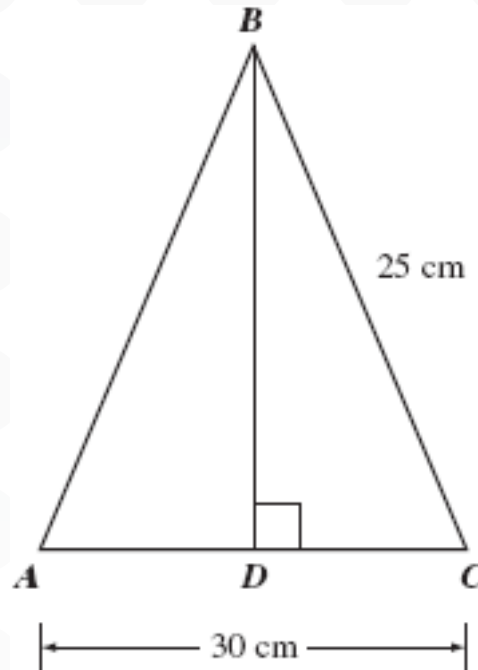


What is the length of $\overline{BD}$?

A 15 centimeters

B 16 centimeters

C 18 centimeters

D 20 centimeters

**What is the length of $\overline{YZ}$ ?**
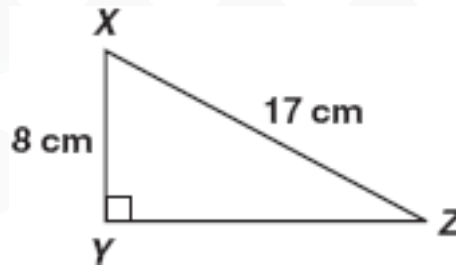


A 9 cm

B 15 cm

C 19 cm

D 25 cm

# Grade 7: Mathematics
*Measurement and Geometry (Performance Level: Basic) – Question 01*

**How many millimeters are in 20 centimeters?**

A 0.02 millimeters

B 0.2 millimeters

C 200 millimeters

D 20,000 millimeters

NA
# Grade 7: Mathematics
*Measurement and Geometry (Performance Level: Basic) – Question 02*

**Which parallelogram is congruent to parallelogram JKLM?**
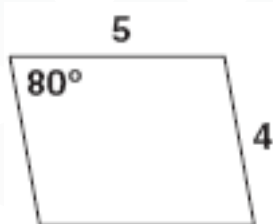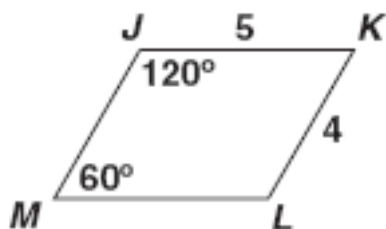




A
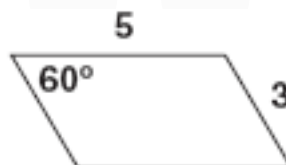


C
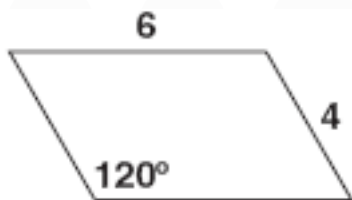


B
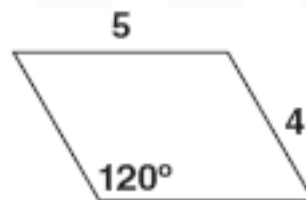


D

# Grade 7: Mathematics

*Number Sense - Exponents, Powers, and Roots (Performance Level: Advanced)*
*– Question 01*

$$\frac{4^2 \cdot 3^5 \cdot 2^4}{4^3 \cdot 3^5 \cdot 2^2} =$$

A  $\dfrac{4}{2}$

B  $\dfrac{3}{2}$

C  1

D  $\dfrac{1}{2}$

# Grade 7: Mathematics
*Number Sense - Exponents, Powers, and Roots (Performance Level: Advanced)*
*– Question 02*

Which expression has the smallest value?

A $\left|-19\right|$

B $\left|-34\right|$

C $\left|11\right|$

D $\left|47\right|$

# Grade 7: Mathematics

*Number Sense - Exponents, Powers, and Roots (Performance Level: Proficient) –*
*Question 01*

Which of the following has the same value as $5^6 \times 5^{-2}$?

<u>A</u>  $5^{-12}$

<u>B</u>  $5^{-3}$

<u>C</u>  $5^4$

<u>D</u>  $5^8$

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# Grade 7: Mathematics

*Number Sense - Exponents, Powers, and Roots (Performance Level: Proficient) –*
*Question 02*

Which value is equivalent to $\dfrac{3^{10}}{3^2}$?

A  5

B  8

C  $3^5$

D  $3^8$

# Grade 7: Mathematics

*Number Sense - Exponents, Powers, and Roots (Performance Level: Proficient) –*
*Question 03*

Which expression is equivalent to $7^5 \times 7^{10}$?

A $7^{15}$

B $7^{50}$

C $49^{15}$

D $49^{50}$

# Grade 7: Mathematics

*Number Sense - Rational Numbers (Performance Level: Advanced) – Question 01*

Which shows 833,000 written in scientific notation?

A $8.33 \times 10^3$

B $8.33 \times 10^4$

C $8.33 \times 10^5$

D $8.33 \times 10^6$

# Grade 7: Mathematics

*Number Sense - Rational Numbers (Performance Level: Advanced) – Question 02*

**Which is an irrational number?**

A  $\sqrt{5}$

B  $\sqrt{9}$

C  $-1$

D  $-\dfrac{2}{3}$

# Grade 7: Mathematics

*Number Sense - Rational Numbers (Performance Level: Advanced) – Question 03*

Jason bought a jacket on sale for 50% off the original price and another 25% off the discounted price.

If the jacket originally cost $88, **what was the final sale price that Jason paid for the jacket?**

A $22

B $33

C $44

D $66

# Grade 7: Mathematics
## *Number Sense - Rational Numbers (Performance Level: Advanced) – Question 04*

Tamika works in a shoe store and is paid a 12% commission on her sales. In January her sales total was $3740.

To the nearest dollar, **how much did Tamika earn in commission for January?**

A $312

B $449

C $3291

D $4189

# Grade 7: Mathematics
*Number Sense - Rational Numbers (Performance Level: Advanced) – Question 05*

A calculator that is regularly priced $20 is on sale for 40% off.

**What is the sale price of the calculator?**

A $8

B $12

C $15

D $16

$$\left(\frac{2}{3}\right)^4 =$$

A $\dfrac{8}{81}$

B $\dfrac{16}{81}$

C $\dfrac{8}{3}$

D $\dfrac{16}{3}$

# Grade 7: Mathematics

Which of the following is equivalent to $\frac{5}{2}$?

A 2.25

B 2.5

C 5.2

D 5.25

# Grade 7: Mathematics
*Number Sense - Rational Numbers (Performance Level: Proficient) – Question 03*

A sweater originally cost $37.50. Last week, Moesha bought it at 20% off.



**How much was deducted from the original price?**

A $7.50

B $17.50

C $20.00

D $30.00

# Grade 7: Mathematics
*Number Sense - Rational Numbers (Performance Level: Proficient) – Question 04*

Marl borrowed $200 at 12% simple interest for one year.

If he makes no payments that year, **how much interest will he owe at the end of the year?**

A $6.00

B $12.00

C $22.40

D $24.00

# Grade 7: Mathematics
## *Number Sense - Rational Numbers (Performance Level: Proficient) – Question 05*

Stuart is buying a pair of jeans that regularly cost $40. They are on sale for 20% off.

If the tax rate is 8%, **what is the sale price of the jeans including tax?**

A $21.60

B $34.56

C $42.34

D $44.16

# Grade 7: Mathematics
*Number Sense - Rational Numbers (Performance Level: Basic) – Question 01*

Dacia made a snack mix using the ingredients listed below.

$1\frac{1}{4}$ cups granola     $\frac{3}{4}$ cup peanuts

$\frac{1}{2}$ cup raisins     $\frac{1}{4}$ cup chocolate chips

**What is the total amount of all four ingredients?**

A $1\frac{3}{4}$ cups

B $2\frac{1}{4}$ cups

C $2\frac{1}{2}$ cups

D $2\frac{3}{4}$ cups

# Grade 7: Mathematics
*Number Sense - Rational Numbers (Performance Level: Basic) – Question 02*

Tasha is buying a CD that is regularly $12.99 and is on sale for $\frac{1}{4}$ off.

**Which expression can she use to estimate the discount on the CD?**

A  $0.0025 \times \$13$

B  $0.04 \times \$13$

C  $0.25 \times \$13$

D  $0.40 \times \$13$

# Grade 7: Mathematics

*Number Sense - Rational Numbers (Performance Level: Below Basic) – Question 01*

Roberto paid $43.08 for 3 CDs. All 3 CDs were the same price.

**How much did each CD cost?**

A $11.36

B $14.36

C $40.08

D $46.08

# Grade 7: Mathematics
*Statistics, Data Analysis, and Probability (Performance Level: Advanced) – Question 01*

The table shows the number of turkey and ham sandwiches sold by Derby's Deli for several days in one week.

**Sandwiches Sold at Derby's Deli**

| Day | Turkey | Ham |
| --- | --- | --- |
| Monday | 7 | 9 |
| Tuesday | 13 | 11 |
| Wednesday | 8 | 8 |
| Thursday | 15 | 6 |
| Friday | 12 | 16 |

What is the difference between the median number of turkey sandwiches sold and the median number of ham sandwiches sold?
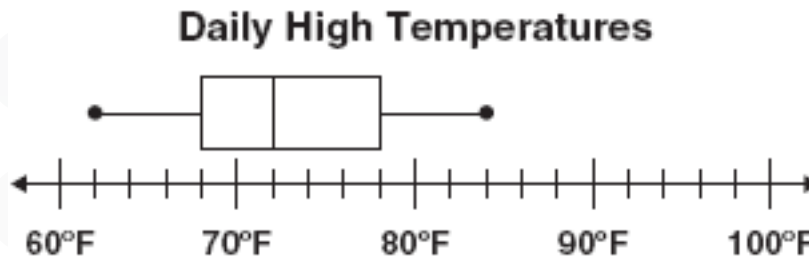
A 0

B 1

C 2

D 3

# Grade 7: Mathematics
*Statistics, Data Analysis, and Probability (Performance Level: Basic) – Question 01*

The box-and-whisker plot below represents the daily high temperatures at a beach in April.

**Daily High Temperatures**



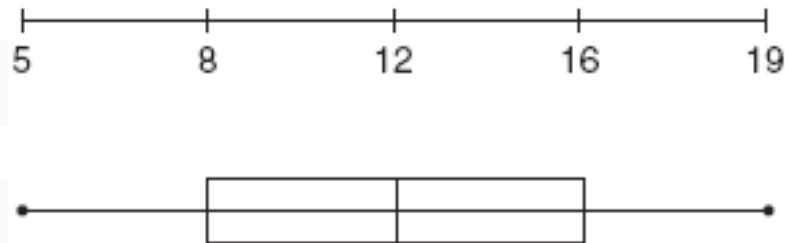**What was the median daily high temperature?**

A  68° F

B  72° F

C  78° F

D  84° F

# Grade 7: Mathematics

*Statistics, Data Analysis, and Probability (Performance Level: Below Basic) –*
*Question 01*

The following data represent the number of years different students in a certain group have gone to school together: 12, 5, 8, 16, 15, 9, 19. These data are shown on the box-and-whisker plot below.



**What is the median of the data?**

A 5

B 8

C 12

D 16