STAAR® Modified

State of Texas Assessments of Academic Readiness Modified

# GRADE 6

## Mathematics

## Modified

## Administered April 2014

# RELEASED

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# STAAR GRADE 6 MATHEMATICS REFERENCE MATERIALS

## LENGTH

| Customary | Metric |
|---|---|
| 1 mile (mi) = 1,760 yards (yd) | 1 kilometer (km) = 1,000 meters (m) |
| 1 yard (yd) = 3 feet (ft) | 1 meter (m) = 100 centimeters (cm) |
| 1 foot (ft) = 12 inches (in.) | 1 centimeter (cm) = 10 millimeters (mm) |

## VOLUME AND CAPACITY

| Customary | Metric |
|---|---|
| 1 gallon (gal) = 4 quarts (qt) | 1 liter (L) = 1,000 milliliters (mL) |
| 1 quart (qt) = 2 pints (pt) | |
| 1 pint (pt) = 2 cups (c) | |
| 1 cup (c) = 8 fluid ounces (fl oz) | |

## WEIGHT AND MASS

| Customary | Metric |
|---|---|
| 1 ton (T) = 2,000 pounds (lb) | 1 kilogram (kg) = 1,000 grams (g) |
| 1 pound (lb) = 16 ounces (oz) | 1 gram (g) = 1,000 milligrams (mg) |

## TIME

1 year = 12 months

1 year = 52 weeks

1 week = 7 days

1 day = 24 hours

1 hour = 60 minutes

1 minute = 60 seconds

# STAAR GRADE 6 MATHEMATICS REFERENCE MATERIALS

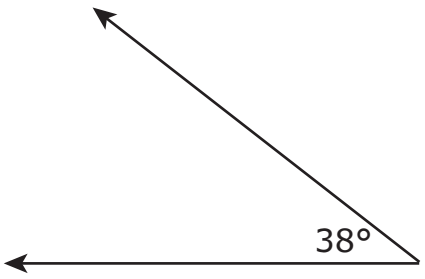
| | | | |
|---|---|---|---|
| **PERIMETER** | | | |
| Square | | | $P = 4s$ |
| Rectangle | | | $P = 2l + 2w$ |
| **CIRCUMFERENCE** | | | |
| Circle | $C = 2\pi r$ | or | $C = \pi d$ |
| **AREA** | | | |
| Triangle | $A = \frac{bh}{2}$ | or | $A = \frac{1}{2}bh$ |
| Square | | | $A = s^2$ |
| Rectangle | $A = lw$ | or | $A = bh$ |
| Parallelogram | | | $A = bh$ |
| Trapezoid | $A = \frac{(b_1 + b_2)h}{2}$ | or | $A = \frac{1}{2}(b_1 + b_2)h$ |
| Circle | | | $A = \pi r^2$ |
| **VOLUME** | | | |
| Cube | | | $V = s^3$ |
| Rectangular prism | $V = lwh$ | or | $V = Bh$ |
| **ADDITIONAL INFORMATION** | | | |
| Pi | | | $\pi \approx 3$ |

# MATHEMATICS

**DIRECTIONS**

**Read each question. For a multiple-choice question, choose the best answer from the three choices provided and fill it in on your answer document. For a griddable question, fill in your answer in the grid on the answer document.**

**1** The measure of the angle below is 38°.




What kind of angle is this?

**A** Acute

**B** Obtuse

**C** Right



GO ON

**2** Holly had $5.00 in her pocket. She spent $1.45. How much does she have in her pocket now?

**F** $4.55

**G** $6.45

**H** $3.55



GO ON

**3** Arnette wants to buy a cake. The table below shows the cake flavors and frosting flavors that she can choose.

Cake

| Cake Flavor | Frosting Flavor |
|---|---|
| Vanilla | Lemon |
| Chocolate | Strawberry |

Arnette will choose 1 cake flavor and 1 frosting flavor. Which list shows all the possible outcomes?

**A** Vanilla, chocolate
Vanilla, lemon
Vanilla, strawberry
Chocolate, vanilla
Chocolate, lemon
Chocolate, strawberry

**B** Vanilla, lemon
Vanilla, strawberry
Chocolate, lemon
Chocolate, strawberry

**C** Vanilla, lemon
Vanilla, strawberry
Chocolate, lemon
Chocolate, strawberry
Lemon, strawberry

**4** Last week Peter worked $h$ hours. He earned \$8 an hour. Which equation can be used to find $m$, the total amount of money that Peter earned last week?

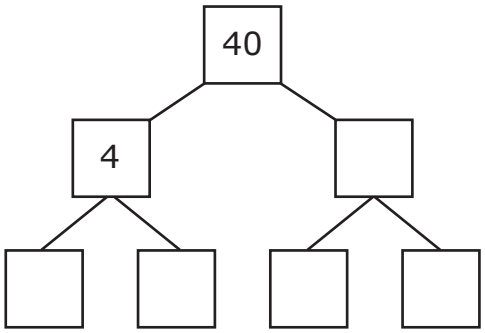
**F** $m = 8 \cdot h$

**G** $m = 8 \div h$

**H** $m = 8 + h$

---

**5** Look at the factor tree below. It can be completed to show the prime factorization of 40.




What is the prime factorization of 40?

**A** $2^3 \cdot 5$

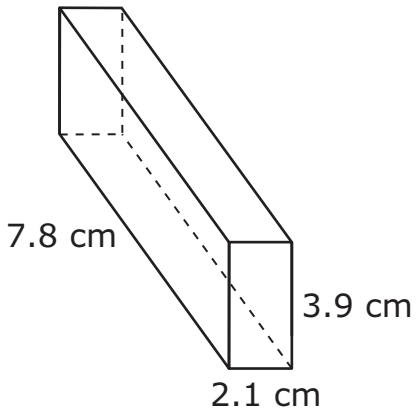
**B** $2 \cdot 4 \cdot 5$

**C** $2^2 \cdot 5$



GO ON

**6** Look at the rectangular prism below. It has a length of 7.8 centimeters, a width of 2.1 centimeters, and a height of 3.9 centimeters (cm).




$$V = lwh$$

Volume of a rectangular prism = length · width · height

Which of these is the best estimate of the volume of this prism?

**F** 42 cubic centimeters

**G** 64 cubic centimeters

**H** 140 cubic centimeters



GO ON

**7** The probability of choosing a blue pencil from a box of pencils is 0.65. Which fraction is equivalent to 0.65?

**A** $\frac{13}{20}$

**B** $\frac{3}{5}$

**C** $\frac{7}{10}$

---

**8** Theo paid 39¢ for 3 erasers at the school store. At this rate, how much will Theo pay for 5 erasers?

**F** 54¢

**G** 65¢

**H** 78¢

**9** Look at the table below. It shows how the area of a triangle changes as its height increases and its base stays the same.

Triangles

| Height, $h$ (inches) | 3 | 5 | 7 |
|---|---|---|---|
| Area, $A$ (square inches) | 15 | 25 | 35 |

Which equation shows the relationship between the height, $h$, and the area, $A$, of these triangles?

**A** $A = h \div 5$

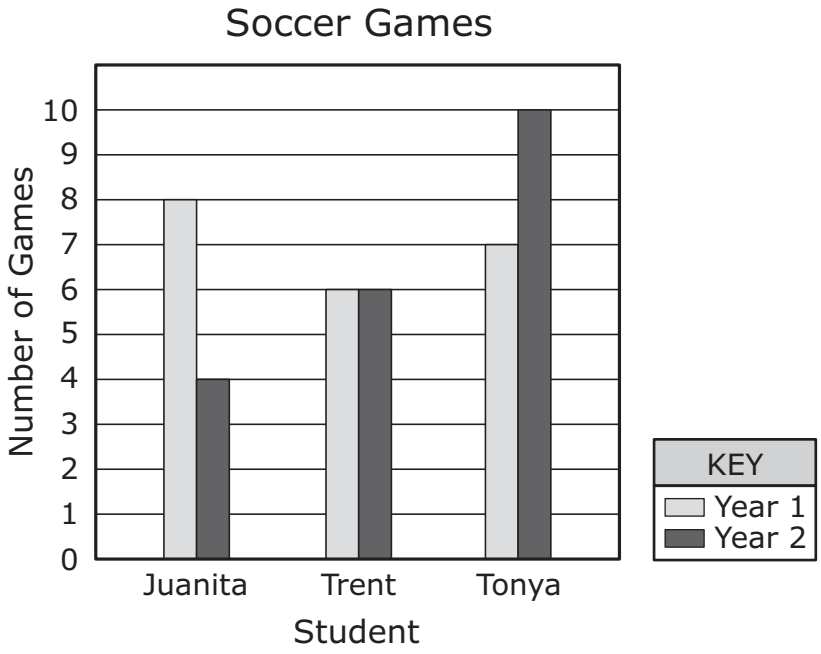
**B** $A = h + 10$

**C** $A = h \times 5$



GO ON

**10** Look at the graph below. It shows the number of soccer games 3 students attended during two years.




How many soccer games did the students attend in Year 1?

You may practice recording your answer in the grid below.

| | | | |
|---|---|---|---|
| | | | • |
| ⓪ | ⓪ | ⓪ | |
| ① | ① | ① | |
| ② | ② | ② | |
| ③ | ③ | ③ | |
| ④ | ④ | ④ | |
| ⑤ | ⑤ | ⑤ | |
| ⑥ | ⑥ | ⑥ | |
| ⑦ | ⑦ | ⑦ | |
| ⑧ | ⑧ | ⑧ | |
| ⑨ | ⑨ | ⑨ | |

Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.



GO ON

**11** Look at the table below. Travis made this table by using a rule.

| $x$ | $y$ |
|---|---|
| 2 | 8 |
| 4 | 14 |
| 6 | 20 |
| 8 | 26 |

Which statement best describes the rule Travis used to find the value of $y$?

**A** Add 8 to $x$ and then multiply by 2

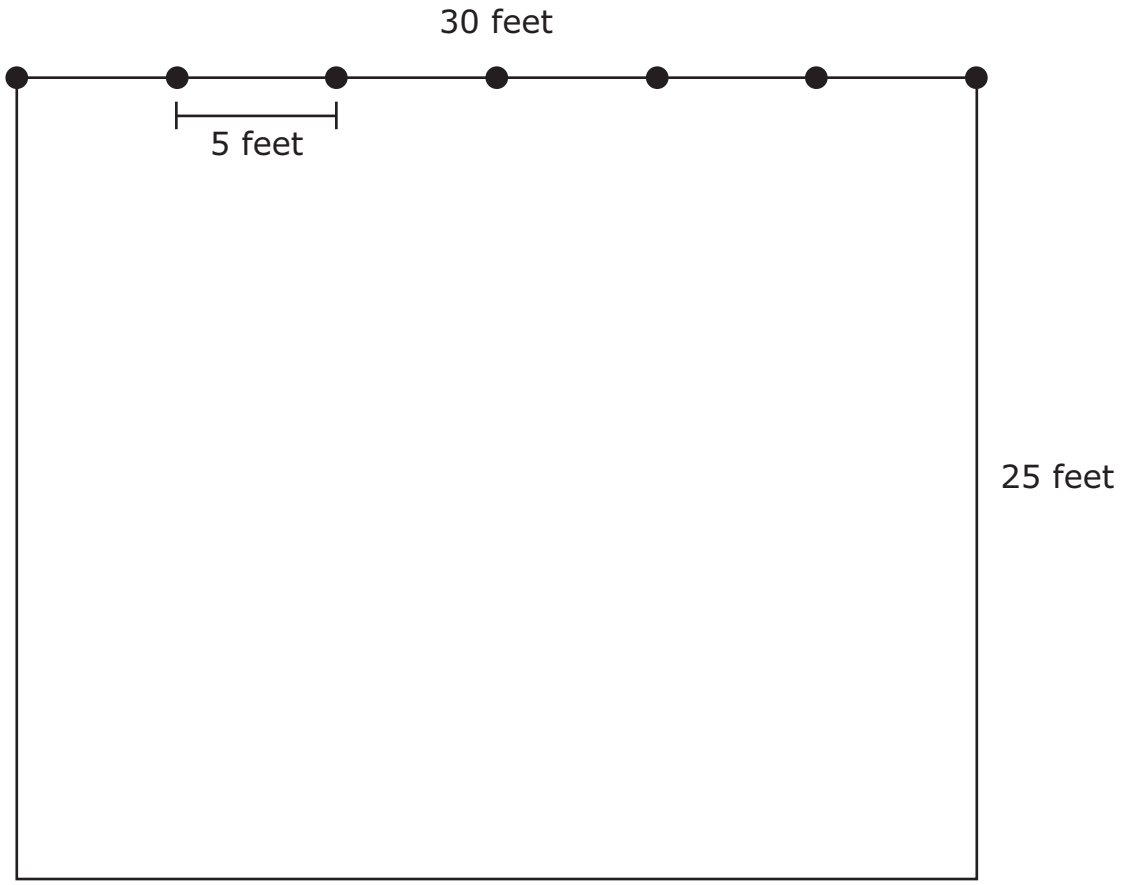
**B** Add 6 to $x$

**C** Multiply $x$ by 3 and then add 2



GO ON

**12** Tong is building a fence around a field shaped like a rectangle. Tong places a fence post every 5 feet along the perimeter. He has already placed posts along one side, as shown below.




What is the total number of fence posts that Tong will use?

**F** 22

**G** 26

**H** 11



GO ON

**13** What is the least common multiple of 4 and 10?

**A** 12

**B** 30

**C** 20

---

**14** Last year Mrs. Cantú took 8 trips to Florida and 6 trips to Oklahoma. What is the ratio of the number of trips she took to Florida to the number of trips she took to Oklahoma?

**F** $\frac{6}{8}$

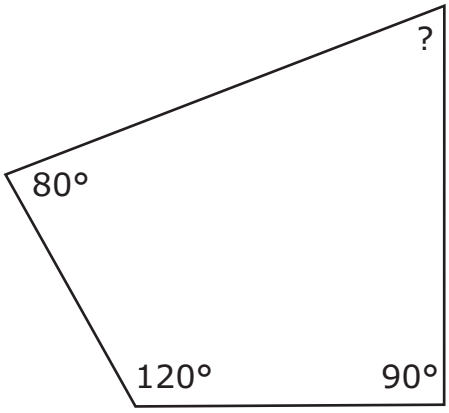
**G** $\frac{8}{6}$

**H** $\frac{6}{14}$



GO ON

**15** Look at the quadrilateral below. Three of the angle measurements are shown.




What is the measure of the fourth angle of this quadrilateral?

**A** 60°

**B** 30°

**C** 70°

---

**16** The outside temperature on a cold morning was 43°F. Then the temperature increased by 18°F in the afternoon. Which integer represents the change in temperature from the morning to the afternoon?

**F** $+18$

**G** $-18$

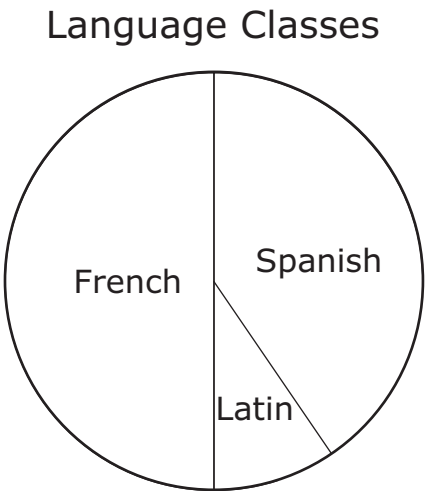
**H** $+43$



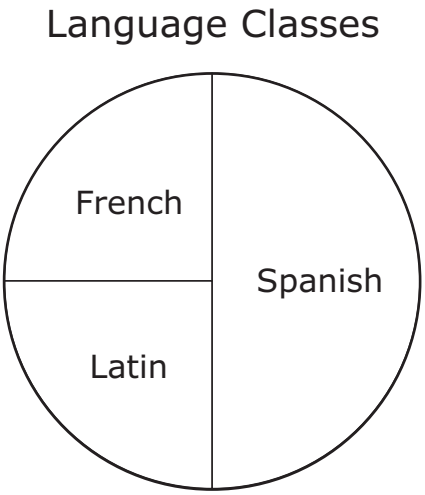
GO ON

**17** Each student at a middle school has to take French, Latin, or Spanish. Out of 100 students, 40 are taking Spanish, 20 are taking Latin, and 40 are taking French. Which graph best represents the percentage of students taking each language class?

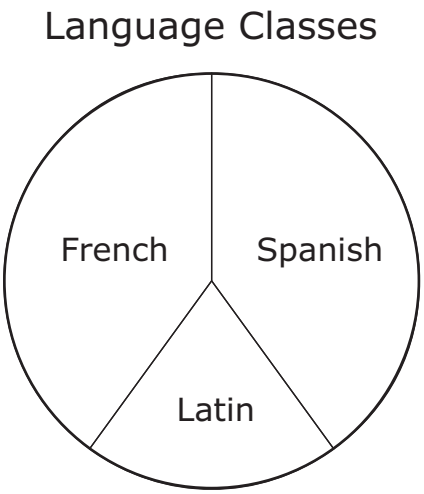
**A**




**C**




**B**






GO ON

**18** Cameron walked on Monday and Friday last week.

- He walked a total of 5.65 kilometers on these two days.
- He walked 3.80 kilometers on Monday.

How far did Cameron walk on Friday?

**F** 2.25 kilometers

**G** 5.27 kilometers

**H** 1.85 kilometers

**19** Which pair of numbers is equivalent?

**A** 0.70, $\frac{7}{100}$

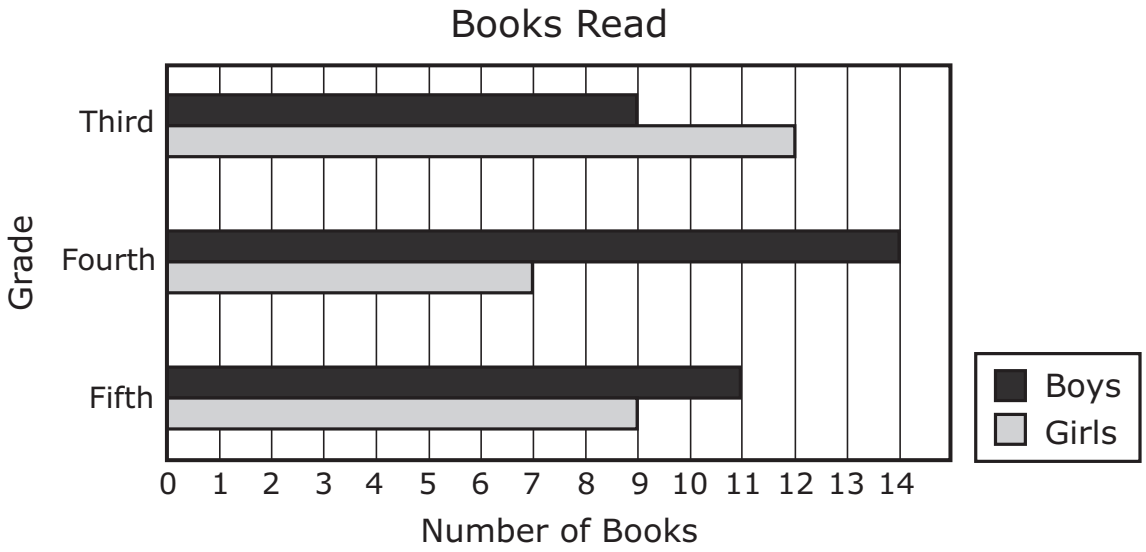
**B** 0.8, $\frac{8}{10}$

**C** 0.03, $\frac{3}{10}$



GO ON

**20** Look at the graph below. It shows the number of books that students in three grades read during one week.




Which statement is supported by the information in the graph?

**F** The students in fifth grade read fewer books than the students in third grade.

**G** The girls in these grades read the same number of books as the boys.

**H** The students in these grades read a total of 60 books.



GO ON

**21** Students in a math club sold candles.

- 10 students sold 9 candles each.
- 2 students sold 5 candles each.

The expression below can be used to find the number of candles the students sold.

$$10 \times 9 + 2 \times 5$$

How many candles did the students sell?

**A** 460

**B** 100

**C** 550



GO ON

**22** A restaurant sells hamburgers. The table below shows the total cost for different numbers of hamburgers.

Hamburgers

| Number, $h$ | Total Cost, $t$ |
|---|---|
| 2 | \$4 |
| 4 | \$8 |
| 6 | \$12 |

Which expression could be used to find $t$, the total cost of $h$ hamburgers?

**F** $h + 4$

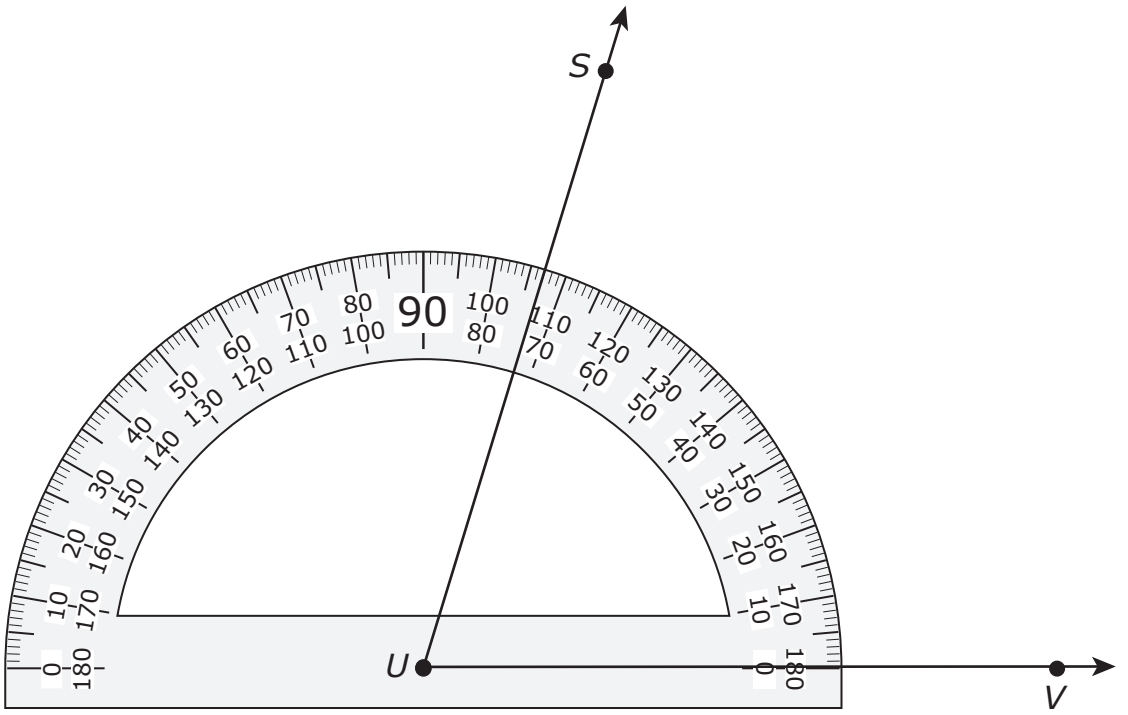
**G** $4h$

**H** $2h$



GO ON

**23** What is the measure of angle *SUV* to the nearest degree?




**A** 73°

**B** 87°

**C** 107°



GO ON

**24** Leo uses about 12 cucumbers for each jar of pickles he makes. What is the best estimate of the number of jars of pickles he can make using 225 cucumbers?

**F** 30

**G** 10

**H** 20

---

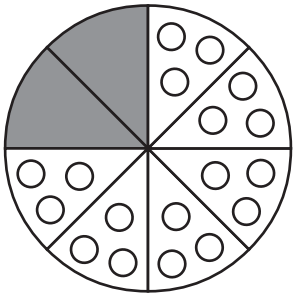
**25** Nicole drew a triangle with one right angle. Which list could be the angle measures of the triangle she drew?

**A** 90°, 45°, 55°

**B** 90°, 35°, 55°

**C** 60°, 60°, 60°

**26** Mr. Price bought one pizza that was cut into 8 equal pieces. The shaded part of the model below shows the fraction of the pizza he ate.



Which expression can be used to find the fraction of the pizza Mr. Price ate?

**F** $\frac{7}{7} - \frac{1}{7}$

**G** $\frac{8}{8} + \frac{3}{4}$

**H** $\frac{8}{8} - \frac{3}{4}$



GO ON

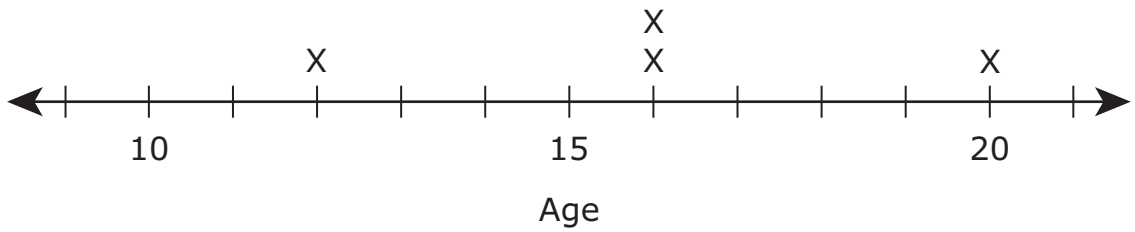
**27** Look at the tally chart below. It shows the age of four people.

**Ages**

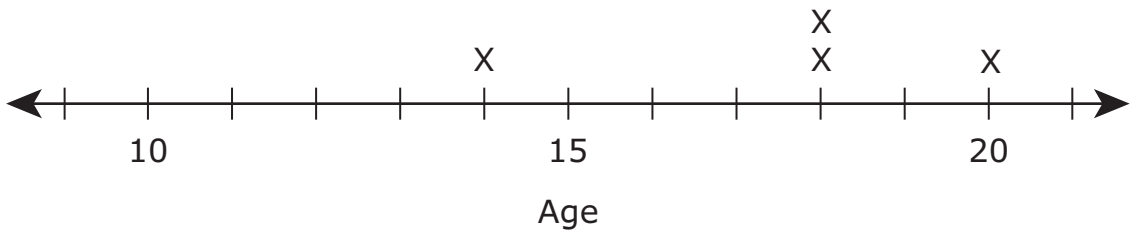
| Age (in years) | Number of People |
|---|---|
| 12 | \| |
| 16 | \|\| |
| 20 | \| |

Which line plot represents the information in the chart?

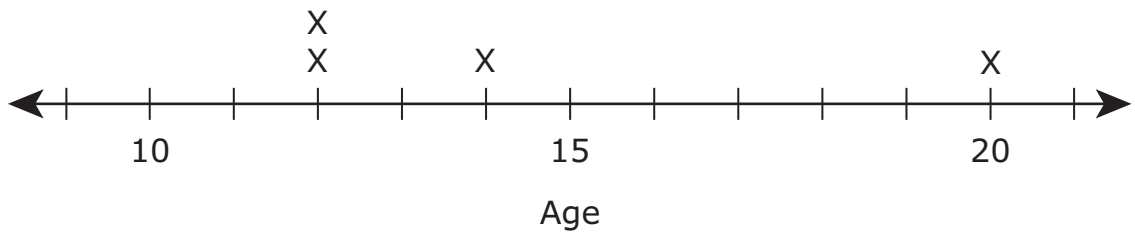
**A**




**B**




**C**






GO ON

**28** Look at the table below. It shows the number and the value of the first three terms in a sequence.

| Term Number, $n$ | 1 | 2 | 3 |
|---|---|---|---|
| Value of Term, $v$ | 64 | 128 | 192 |

Which expression can be used to find $v$, the value of any term in this sequence?

**F** $n - 64$

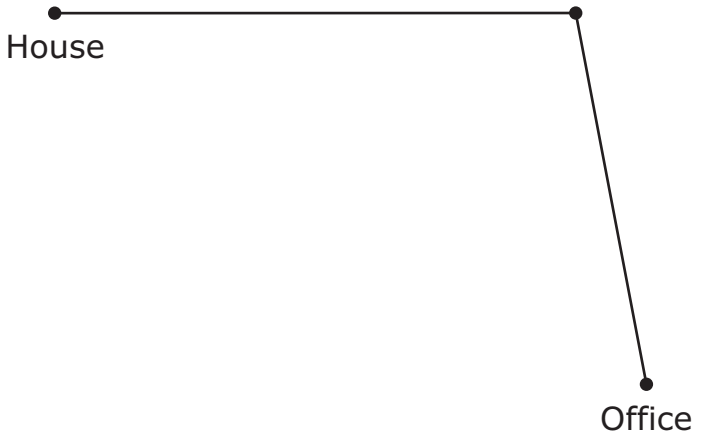
**G** $n \div 64$

**H** $n \times 64$



GO ON

**29** The scale drawing below shows the route Mr. Rojas travels from his house to his office. Use the ruler provided to measure the route to the nearest centimeter.




| Scale |
| --- |
| 1 centimeter : 2 kilometers |

Which measurement is closest to the number of kilometers Mr. Rojas travels from his house to his office?

**A** 6 kilometers

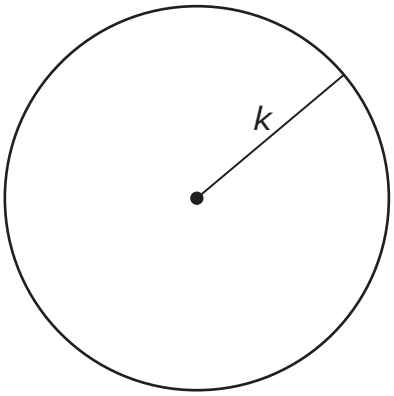
**B** 12 kilometers

**C** 24 kilometers



GO ON

**30** The radius of the circle below is $k$ units long.




Which expression could be used to find the circumference of the circle?

**F** $2\pi k$

**G** $\pi k$

**H** $4\pi k$



GO ON

**31** Larry is making cupcakes.

- He is making cupcakes for 36 friends.
- He needs to make 2 cupcakes for each friend.
- He uses 6 cups of flour to make 36 cupcakes.

How many cups of flour will Larry use to make the cupcakes he needs?

**A** 18 cups

**B** 3 cups

**C** 12 cups



GO ON

**32** Erin has a bottle that contains 32 fluid ounces of water. Keva has a bottle that contains 16 fewer fluid ounces. Which equation can be used to find $k$, the number of fluid ounces of water in Keva's bottle?

**F** $k = 32 + 16$

**G** $k = 32 - 16$

**H** $k = 32 \div 16$

---

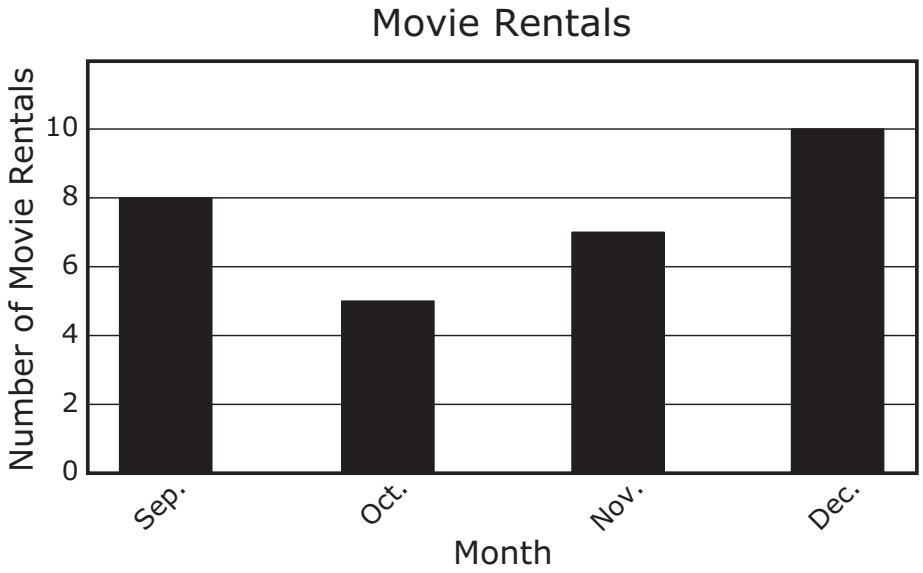
**33** Javier bought $3\frac{7}{8}$ yards of material to cover some pillows. Which number is equivalent to $3\frac{7}{8}$?

**A** 3.625

**B** 3.75

**C** 3.875

**34** The graph below shows the number of movies a family rented during several months.




Which statement is supported by the information in the graph?

**F** The family rented half as many movies in September as they did in December.

**G** The family rented fewer movies during October and November combined than during December.

**H** The family rented twice as many movies in December as they did in October.



GO ON

**35** Jana glues photos into a photo album. It takes her 50 minutes to finish 5 pages in the album. At this rate, how long will it take her to finish a total of 20 pages?

**A** 200 minutes

**B** 70 minutes

**C** 270 minutes

---

**36** Miranda is $4\frac{1}{2}$ feet tall. Kayla is 3 inches taller than Miranda.

| |
|---|
| 1 foot = 12 inches |

How tall is Kayla?

**F** 4 feet 4 inches

**G** 4 feet 3 inches

**H** 4 feet 9 inches

**37** Look at the table below. It shows the length of two trails in a state park.

Trails

| Name | Length (miles) |
|---|---|
| Pine Trail | $\frac{2}{10}$ |
| Cedar Trail | $\frac{1}{2}$ |

The Tanner family plans to hike both trails. What will be the total distance they hike?

**A** $\frac{7}{10}$ mile

**B** $\frac{3}{12}$ mile

**C** $\frac{5}{10}$ mile



GO ON

**38** Look at the sticker below. It is a circle with a diameter of 2 inches.

Which expression can be used to find the circumference of this circle in inches?

**F** $\pi \cdot 4$

**G** $\pi \cdot 2$

**H** $\pi \div 2$



GO ON

**39** A drama club put on a play.

- The club collected $175 in ticket sales.
- The price of each ticket was $7.

Which equation can be used to find $t$, the number of tickets sold?

**A** $t = 175(7)$

**B** $t = 175 - 7$

**C** $t = \frac{175}{7}$

---

**40** A truck driver drove for 2 hours 30 minutes before he arrived at his first stop. If he arrived at his first stop at 8:35 P.M., what time did he start driving?

**F** 9:05 P.M.

**G** 11:05 P.M.

**H** 6:05 P.M.

**41** Look at the table below. It shows the length and width of several rectangles. Each rectangle has the same relationship between its length and width.

Rectangles

| Length, $l$ (centimeters) | Width, $w$ (centimeters) |
|---|---|
| 12 | 8 |
| 6 | 2 |
| 9 | 5 |

Which expression can be used to find $w$, the width of a rectangle in this table that has a length of $l$ centimeters?

**A** $l + 4$

**B** $l - 4$

**C** $l - 5$



GO ON

**42** The measure of an angle is 115°. What kind of angle is this?

**F** Acute

**G** Obtuse

**H** Right

BE SURE YOU HAVE RECORDED ALL OF YOUR ANSWERS ON THE ANSWER DOCUMENT.

STOP

# STAAR MODIFIED
# GRADE 6
# Mathematics
## April 2014

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