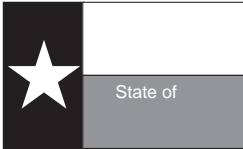




# STAAR GRADE 7 MATHEMATICS REFERENCE MATERIALS

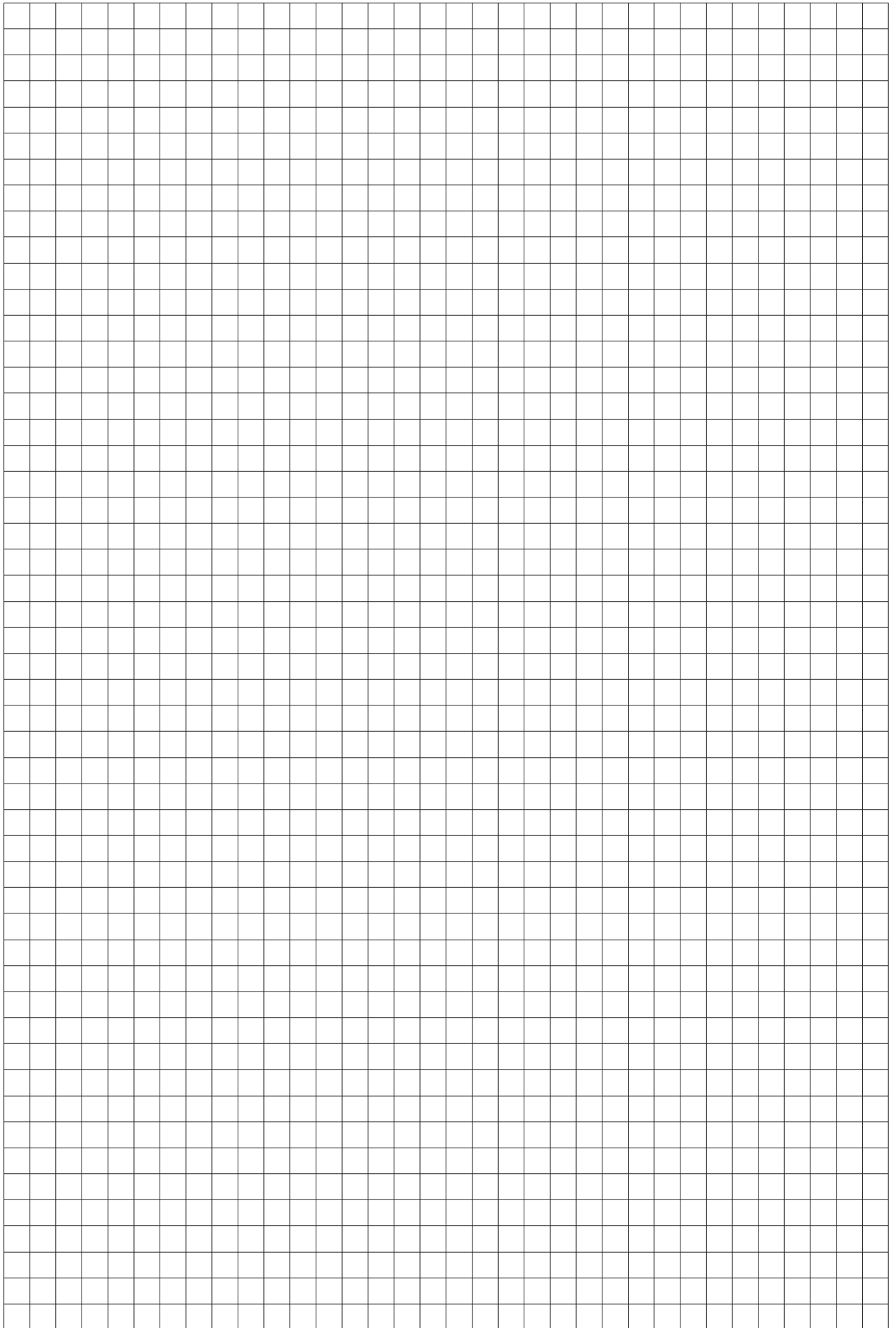


# STAAR GRADE 7 MATHEMATICS REFERENCE MATERIALS

Customary

Metric





# MATHEMATICS

## DIRECTIONS

Read each question carefully. For a multiple-choice question, determine the best answer to the question from the four answer choices provided. For a griddable question, determine the best answer to the question. Then fill in the answer on your answer document.

- 1 The length of a ruler is 12 inches. There are approximately 25.4 millimeters in 1 inch.

Which measurement is closest to the length of the ruler in millimeters?

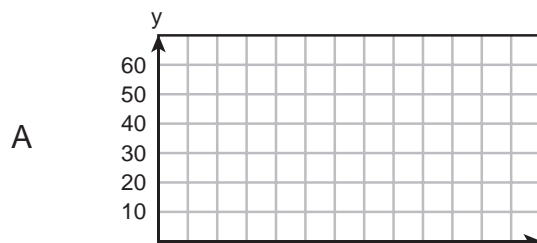
- A 3,048 mm
- B 30.48 mm
- C 304.8 mm
- D 3.048 mm



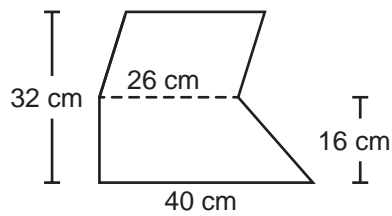


- 3 Nicole had a collection of 60 stuffed animals. She gave away 5 stuffed animals per month until all her stuffed animals were gone.

Which graph best represents this situation?



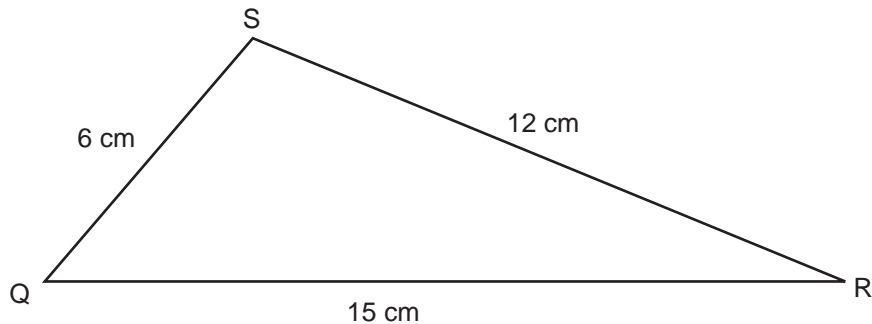
- 4 This figure is composed of a parallelogram and a trapezoid.



What is the area of the figure in square centimeters?

- F  $1,056 \text{ cm}^2$
- G  $1,360 \text{ cm}^2$
- H  $944 \text{ cm}^2$
- J  $528 \text{ cm}^2$

- 5 Triangle QRS and its dimensions are shown.



Which measurements in centimeters represent the dimensions of a triangle that is similar to triangle QRS?

- A 8 cm, 14 cm, 17 cm
- B 10 cm, 20 cm, 25 cm
- C 4 cm, 10 cm, 13 cm
- D 12 cm, 24 cm, 36 cm





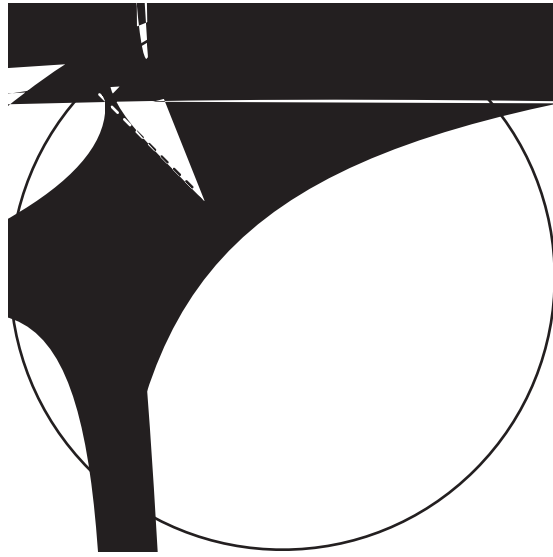
- 9 Chad will have new carpet put on the rectangular floors of two rooms in his house. One floor is  $12\frac{1}{2}$  feet long, and the other floor is  $15\frac{3}{4}$  feet long. Each floor has a width of 10 feet.

What is the total area in square feet of the new carpet?

- A  $125\text{ ft}^2$
- B  $157.5\text{ ft}^2$
- C  $282.5\text{ ft}^2$
- D 96.5
-



- 13 Use the ruler provided to measure the dimensions of the circle to the nearest centimeter.



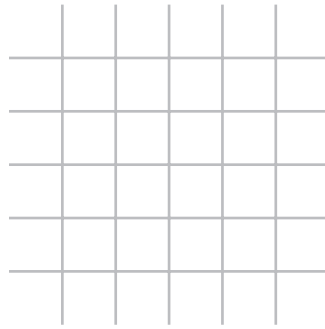




- 15 A dog eats 1.25 cups of dog food twice a day. Which graph best represents this relationship?



C



- 16 The table shows the numbers of different colors of pencils in a pencil case. A student will randomly select one pencil from the pencil case.

Colored Pencils


18 Angle F and angle H are supplementary angles.

- The measure of angle F is  $77^\circ$  .
- The measure of angle H is  $(5x + 18)^\circ$  .

Which equation can be used to find the value of  $x$ ?

F  $77 = 5x + 18$

G  $77 + (5x + 18) = 180$

H  $77 + (5x + 18) = 90$

J  $77 + (5x + 18) = 360$



- 20 Which equation represents the linear relationship between the x-values and the y-values in the table?

x	y
-1	-11
1	1
3	13
5	25

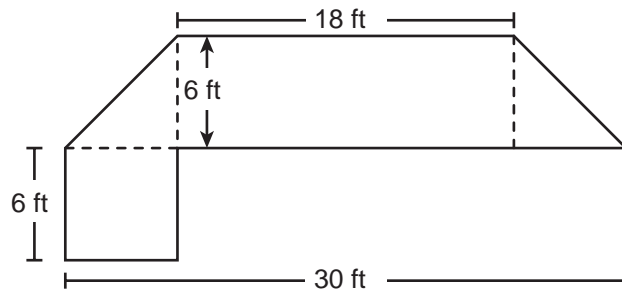
F  $y = 2x + 12$

G  $y = 5x - 6$

H  $y = 6x - 5$

J  $y = x - 11$

- 21 A sidewalk in the shape of two triangles, a rectangle, and a square was built around the edge of a building as shown.



What is the area of the sidewalk in square feet?

A  $108 \text{ ft}^2$

B





- 24 The radius of circle S is half the radius of circle L. The radius of circle L is 8 millimeters.

Which measurement is closest to the area of circle S in square millimeters?

F  $50.24 \text{ mm}^2$

G  $25.12 \text{ mm}^2$

H  $200.96 \text{ mm}^2$

J  $12.56 \text{ mm}^2$

- 
- 25 Which situation is best represented by the following equation?

$$68.50x + 127.95 = 675.95$$

A

- 26 Regina has three number cubes. The faces of each number cube are numbered from 1 to 6. Regina will roll each number cube one time.

What is the probability that all three number cubes will land on an odd number?

F  $\frac{1}{2}$

G  $\frac{1}{6}$

H  $\frac{1}{3}$

J  $\frac{1}{8}$

- 
- 27 What is the solution set for this inequality?

$$5d + 5 \frac{1}{2} < 17$$

A  $d < 2 \frac{3}{10}$

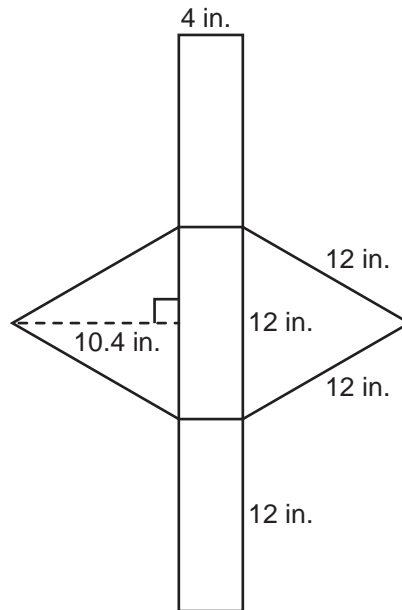
B  $d < 2 \frac{3}{10}$

C  $d < 4 \frac{1}{2}$

D  $d < 4 \frac{1}{2}$



- 28 The net of a triangular prism and its approximate dimensions are shown in the diagram.



Which measurement is closest to the total surface area of the triangular prism in square inches?

F  $268.8 \text{ in.}^2$

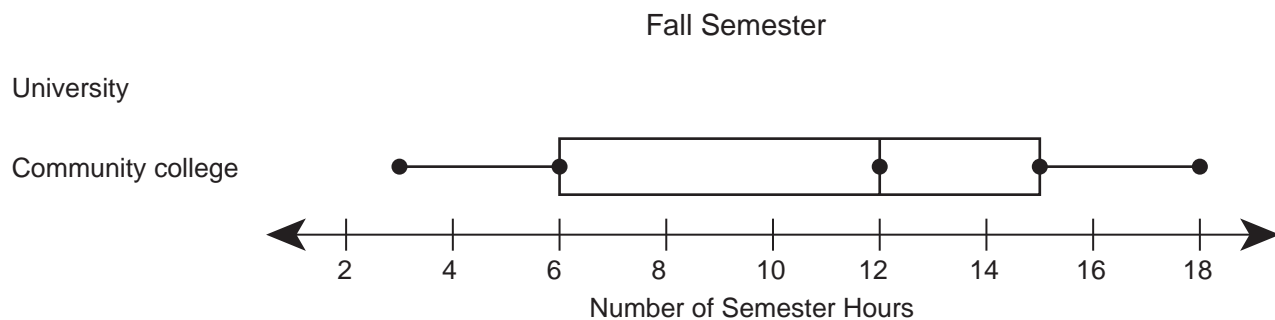
G  $432 \text{ in.}^2$

H  $288 \text{ in.}^2$

J H H



- 31 The box plots summarize the number of semester hours students enrolled in a university and a community college completed during the fall semester.



- 33 A student has a set of cards. Each card has a picture of one shape. The table shows the number of cards that have a picture of each shape. The student will randomly select one card from the set.

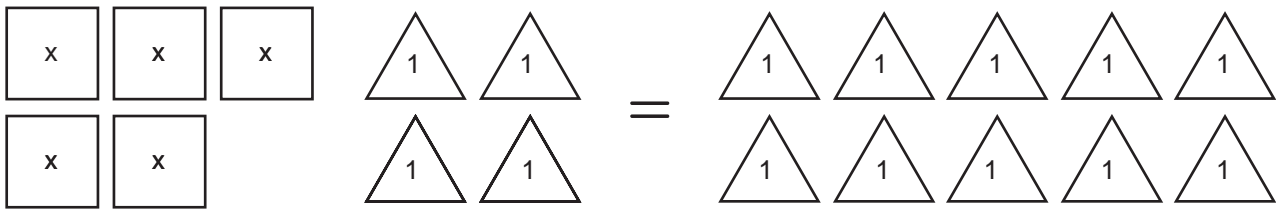
Shape Cards

Shape	Number of Cards
Circle	8
Pentagon	12
Rectangle	10
Square	6
Triangle	4

Which statement is true?

- A The probability of selecting a card with a picture of a circle is  $\frac{5}{8}$ ,  
and the probability of selecting a card that is not a picture of a  
circle is  $\frac{3}{8}$ .
- B The probability of selecting a card with a picture of a circle is  $\frac{3}{8}$ ,  
and the probability of selecting a card that is not a picture of a  
circle is  $\frac{5}{8}$ .
- C The probability of selecting a card with a picture of a circle is  $\frac{1}{5}$ ,  
and the probability of selecting a card that is not a picture of a  
circle is  $\frac{4}{5}$ .
- D The probability of selecting a card with a picture of a circle is  $\frac{4}{5}$ ,  
and the probability of selecting a card that is not a picture of a  
circle is  $\frac{1}{5}$ .

34 The model represents an equation.



What is the solution for the equation?

F  $x = \frac{14}{5}$

G  $x = \frac{6}{5}$

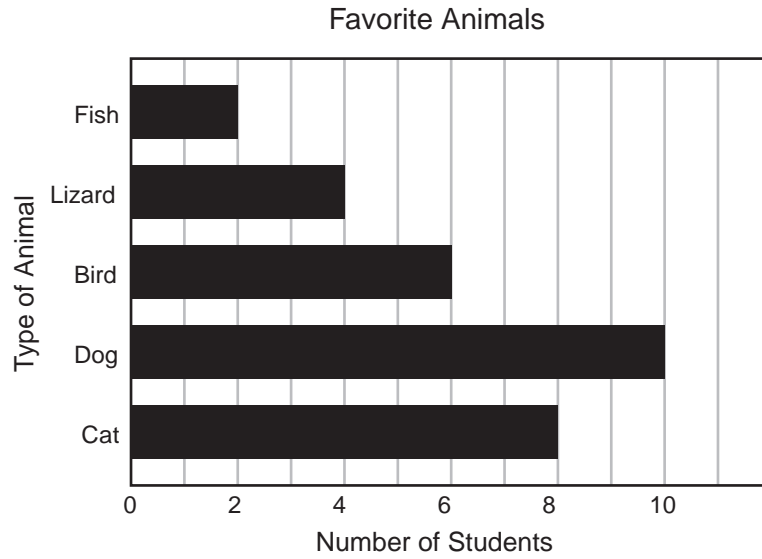
H  $x = \frac{5}{4}$

J  $x = \frac{15}{4}$

- 
- 35 A survey showed that 8 out of 20 homeowners in a neighborhood had cable television. If there were 320 homeowners in the neighborhood, how many could be expected to have cable television?

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

- 36 Students were surveyed to determine their favorite types of animals. The bar graph shows the number of students who selected each type of animal.



What percentage of the students surveyed selected “Bird” as their favorite type of animal?

- F 20%
- G 5%
- H 6%
- J 80%



- 37 A principal has given a class \$75 to help pay for a field trip to a zoo. The students in the class are selling pies for \$5 each to earn the rest of the money they need. The field trip will cost a total of \$386.

Which inequality can be used to find  $p$ , the number of pies the class needs to sell in order to earn enough money to pay for the field trip?

A  $5p + 75 < 386$

B  $5p + 75 > 386$

C  $75p + 5 < 386$

D  $75p + 5 > 386$

- 
- 38 The dimensions of a rectangular prism are 1.5 feet by 3.5 feet by 2 feet. What is the volume of the rectangular prism in cubic feet?

F  $7 \text{ ft}^3$

G  $7.25 \text{ ft}^3$

H  $8.5 \text{ ft}^3$

J  $10.5 \text{ ft}^3$

39 The circumference of a circle is  $C$  inches. The diameter of the circle is 19 inches.

Which expression best represents the value of  $\pi$  ?

A

40 A monthly budget for a small family is shown.

Family Budget

Item	Amount
Mortgage payment	\$800
Food	\$600
Transportation	\$360
Childcare	\$540
Health insurance	\$750
Miscellaneous	\$580

Which equation can be used to find  $b$ , the minimum amount of money the family must earn annually in order to meet this budget?

F  $b = \$3,630 \times 12$

G  $b = \$3,630 \times 52$

H  $b = \$43,560 \div 52$

J  $b = \$43,560 \div 365$



STAAR  
GRADE 7  
**Mathematics**  
May 2022

F

