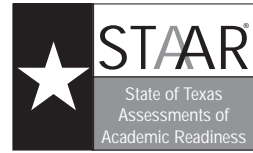


STAAR GRADE 6 MATHEMATICS REFERENCE MATERIALS



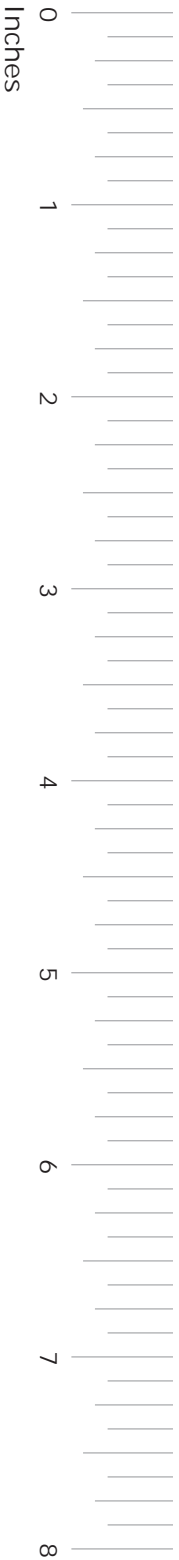
$$A = \frac{1}{2}bh$$

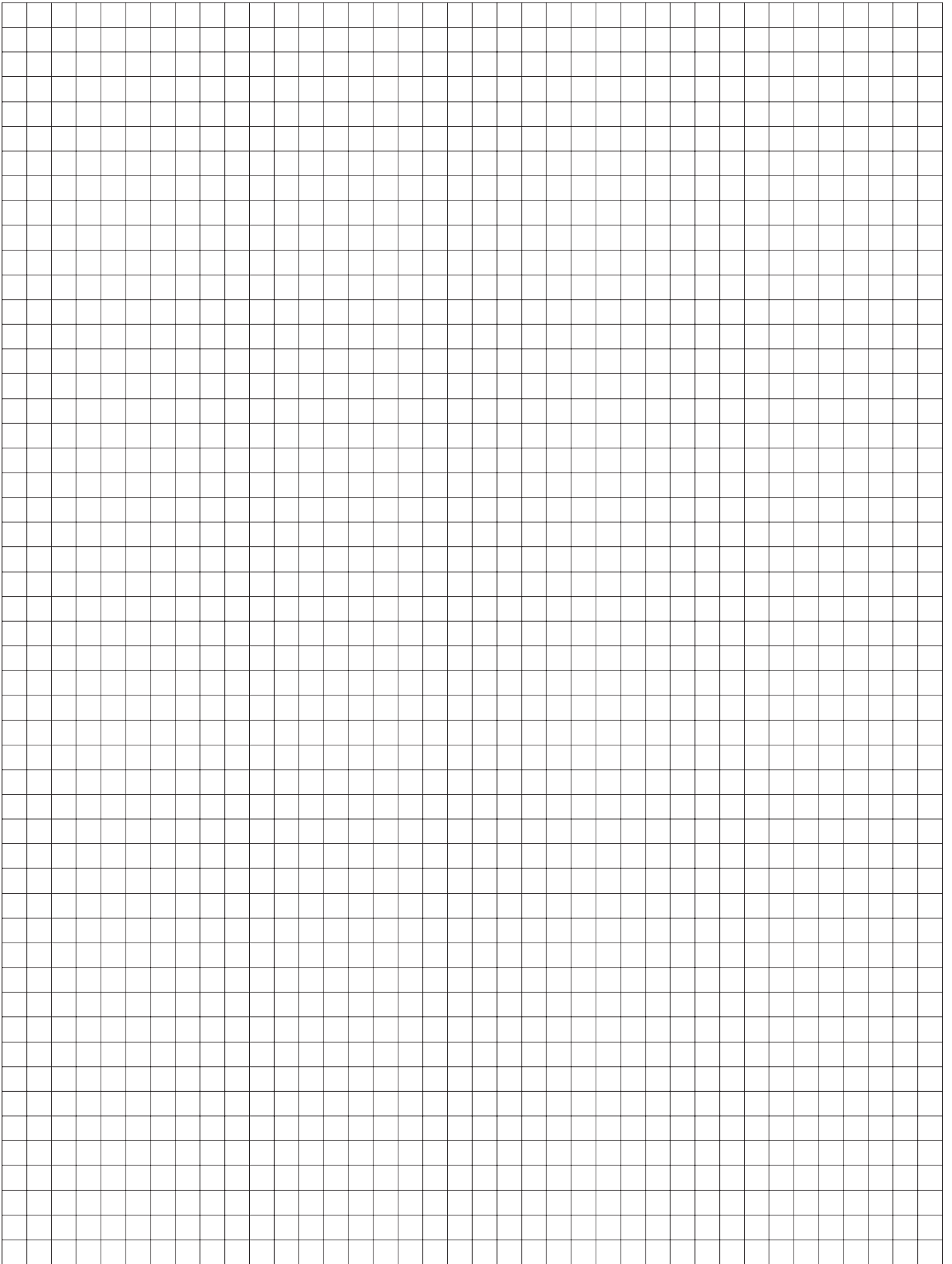
$$A = bh$$

Trapezoid

$$A = \frac{1}{2}(b_1 + b_2)h$$

$$= h$$





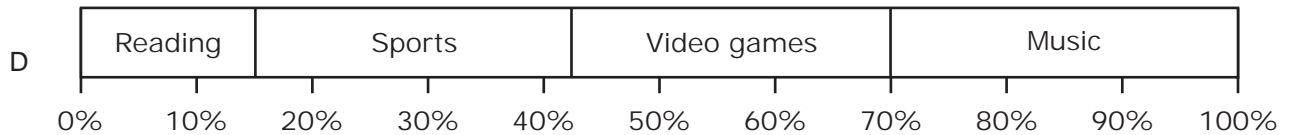
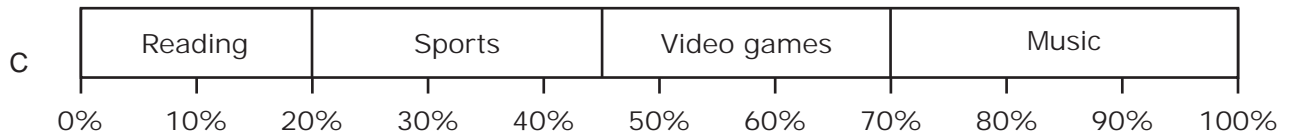
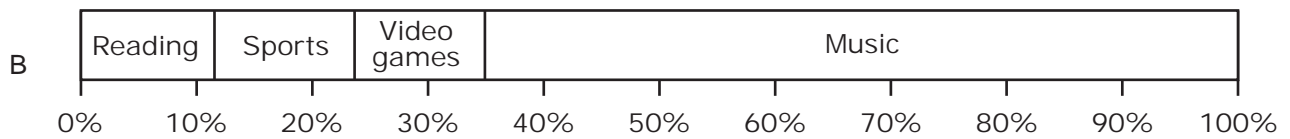
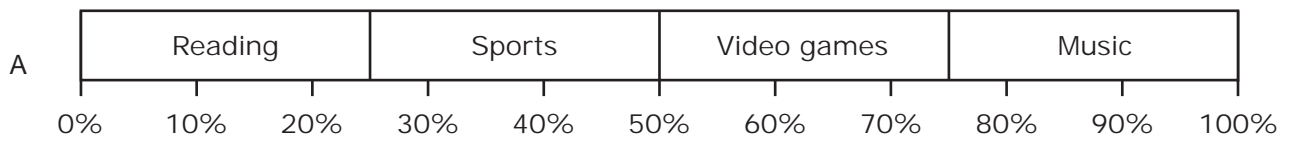
MATHEMATICS

- 3 Hector surveyed all the sixth graders at his school about their favorite after-school activity. The table shows the results that were used to make a bar graph.

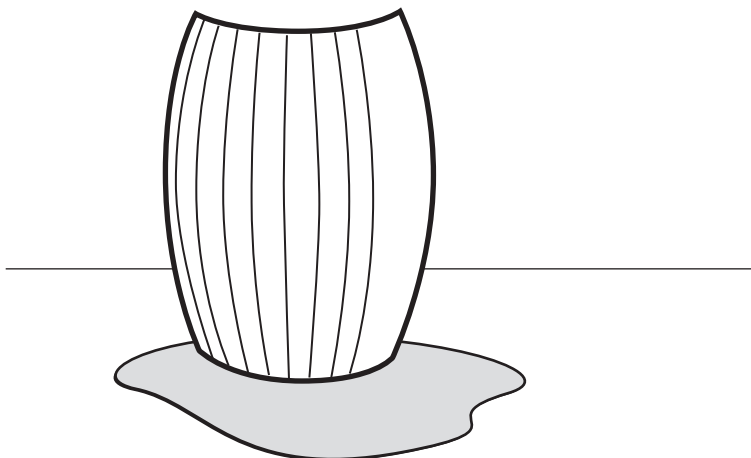
Favorite Activities

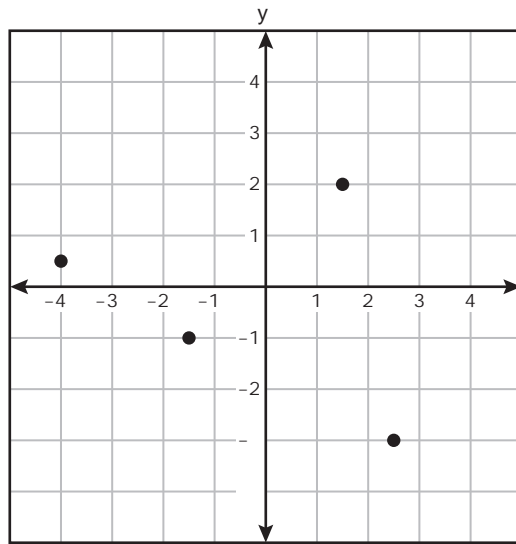
Activity	Number of Students
Reading	44
Sports	55
Video games	55
Music	66

Which percentage bar graph best represents the data?



4 A barrel contained 60 gallons of water. Water leaked out of the barrel at a rate of 5 gallons every 3 days.





6 A carpenter wants to cut a board that is $\frac{5}{6}$ ft long into pieces that are $\frac{5}{16}$ ft long. The carpenter will use the expression shown to calculate the number of pieces that can be cut from the board.

$$\frac{5}{6} \div \frac{5}{16}$$

Which expression can also be used to calculate the number of pieces that can be cut from the board?

F $\frac{5}{6} \cdot \frac{16}{5}$

G $\frac{5}{6} \cdot \frac{5}{16}$

H $\frac{6}{5} \div \frac{5}{16}$

J $\frac{6}{5} \div \frac{16}{5}$

- 7 The rectangle below represents the base of a rectangular prism. Use the ruler provided to measure the dimensions of the rectangle to the nearest centimeter.



The height of the rectangular prism is 12 centimeters. What is the volume of the rectangular prism?

- A 32 cm^3
- B 20 cm^3
- C 360 cm^3
- D 240 cm^3

- 12 A team of four players competed in a golf contest. The names and scores of the players on the team are shown in the table. The team's score is the sum of all the scores in the table.

Golf Scores

Player	Score
Brett	\checkmark 2
Elliott	+3
Lin	\checkmark 4
Tyrone	\checkmark 1

What is the team's score?

- F 10
- G 10
- H 4
- J Not here

-
- 13 A farmer watered $\frac{3}{8}$ of a field. What percentage is equivalent to the fraction of the field the farmer watered?

- A 24.00%
- B 37.50%
- C 8.30%
- D 3.75%

14 The graph shows the amount of money earned

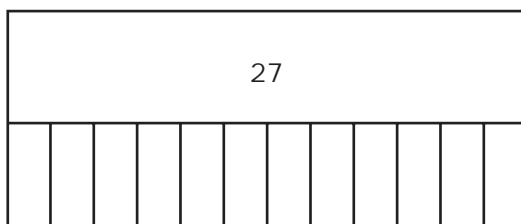
- 17 The list shows the number of licenses issued every year to lobster boats in Massachusetts for a five-year period.

551, 554, 529, 534, 530

What is the range of these data?

- A 534
- B 540
- C 21
- D 25

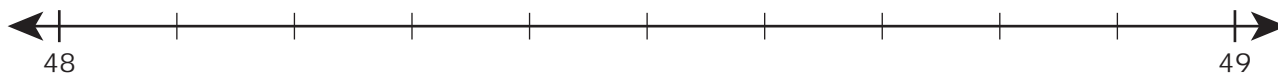
-
- 18 Holly bought a magazine subscription for a year. She paid \$27. Holly wanted to find the price, p , of the subscription each month. She created the model shown to help find this price.



What was the price of the subscription each month?

- F \$39.00
- G \$2.25
- H \$324.00
- J \$22.50

19 Alyssa will correctly label the numbers 48.4 , $48\frac{1}{2}$, 48.09 , and $48\frac{3}{5}$ on the number line below.



Which number will be located closest to 49?

A 48.4

B $48\frac{1}{2}$

C 48.09

D $48\frac{3}{5}$

20 Which statement describes the relationship between x and y in these two equations?

$$y = 2x$$

$$y = x + 2$$

F In $y = 2x$ the value of y is 2 more than the value of x and in $y = x + 2$ the value of y is twice the value of x

G In $y = 2x$ and in $y = x + 2$, the value of y is 2 more than the value of x

H In $y = 2x$ and in $y = x + 2$, the value of y is twice the value of x

21 The table shows the monthly

Bank	Monthly Fee
Y	1% of checking account balance
Z	\$5

23 A county with an area of 425 square miles has a population

Money at the Beginning of the Day, d	Money After Riding the Bus to Work,
\$15.75	\$14.50
\$9.50	\$8.25
\$5.25	\$4.00
\$30.00	\$28.75

25 This shaded model represents 100%.



Which model represents $33\frac{1}{3}\%$?



26 The table below shows the relationship between the perimeter and area of four squares.

Squares

Area, A (square units)	Perimeter, P (units)
1	4
4	8
9	12
16	16

Which equation can be used to find A , the area of a square that has a perimeter of P units?

F $A = (P \div 4) \times (P \div 4)$

G $A = (P - 4)$

H $A = (P + 4) \times (P + 4)$

J $A = P$

27 The line plot shows the number of pounds of fish eaten by each dolphin at a zoo.

Fish Eaten by Dolphins
(pounds)

A

Stem	Leaf
1	8 8
2	0 0 2 6
3	1 1 1 3

KEY
2|0 = 20 pounds

Fish Eaten by Dolphins
(pounds)

C

Stem	Leaf
1	8 8 9
2	0 2 6
3	1 1 1 4

KEY
2|0 = 20 pounds

Fish Eaten by Dolphins
(pounds)

B

Stem	Leaf
1	7 7 8
2	0 1 5
3	0 0 0 3

KEY
2|0 = 20 pounds

Fish Eaten by Dolphins
(pounds)

D

Stem	Leaf
1	8 9
2	0 2 6
3	1 4

KEY
2|0 = 20 pounds

28 A meteorologist at a television station reported that a town received 0.95 in. of rain. Which fraction is equivalent to this amount of rain in inches?

F $\frac{50}{100}$ in.

G $\frac{19}{20}$ in.

H $\frac{95}{10}$ in.

J $\frac{9}{5}$ in.

29 The table shows the average annual salary for four jobs.

Average Annual Salaries

Job	Average Annual Salary (dollars)
Copywriter	55,869
Librarian	54,407
Elevator technician	71,900
Aircraft mechanic	52,975

Based on this information, how much more will an elevator technician make than a librarian over 10 years?

A \$174,930

B \$126,307

C \$17,493

D \$1,263,070

30 A teacher wrote this expression on the board.

$$(-6)(2) + (8 \div 4)$$

What is the value of this expression?

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

31 Which equation has a solution of $\frac{2}{3}$ for n ?

A $n - 1 = \frac{1}{3}$

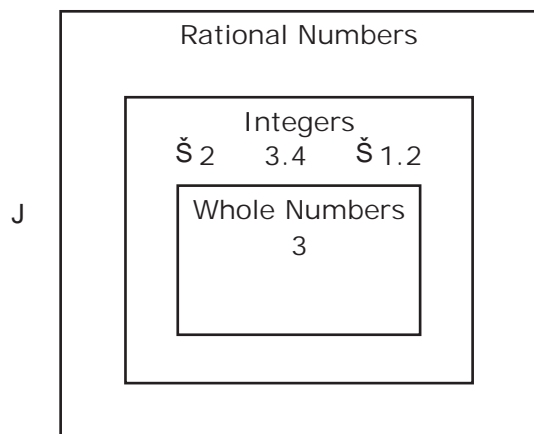
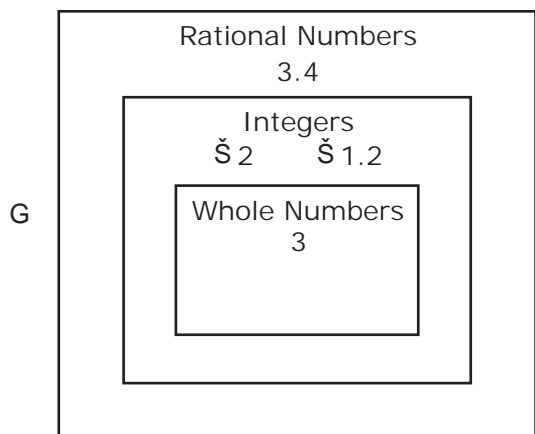
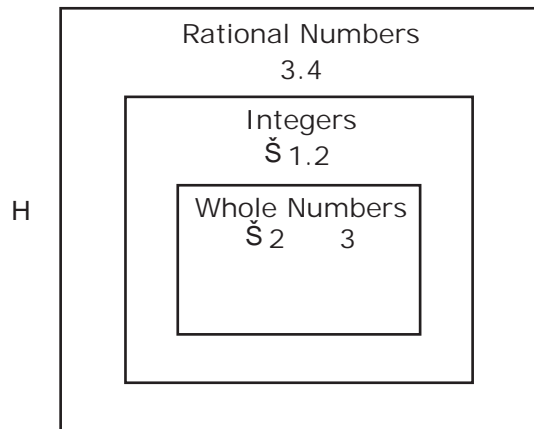
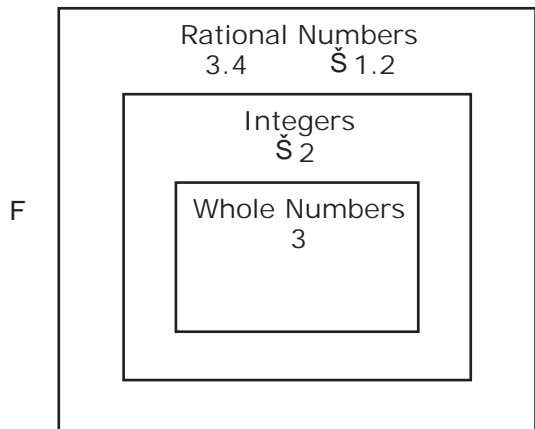
B $16n = 24$

C $15n = 10$

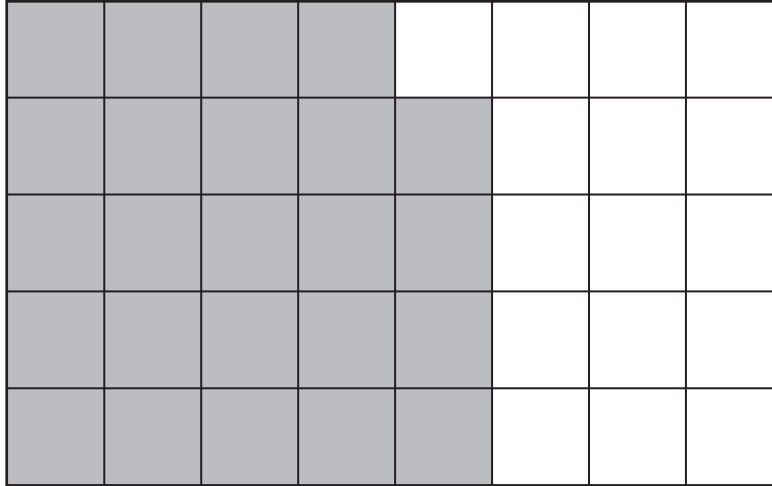
D $1\frac{1}{3} + n = 3$

32 Which graphic organizer correctly groups the following numbers?

3.4 2 3 1.2



- 35 The shaded area on the grid represents the part of a rectangular wall that was painted. Each small square on the wall has the same dimensions.



What percentage of the wall was painted?

- A 64%
- B 24%
- C 60%
- D 16%

- 36 Before Nina bought groceries on April 22, she had a balance of \$487.25 in her checking account. Nina wrote her transactions in her check register. She included all her transactions through the end of the day on April 23.

Nina's Check Register

Date	Description	Deposits (dollars)	Withdrawals (dollars)	Balance (dollars)
				487.25
4/22	Groceries		72.50	
4/23	Cash deposit	15.00		

Based on the transactions in Nina's check register,

B

q	r
5	15.1
7	17.1
9	19.1
11	21.1

C

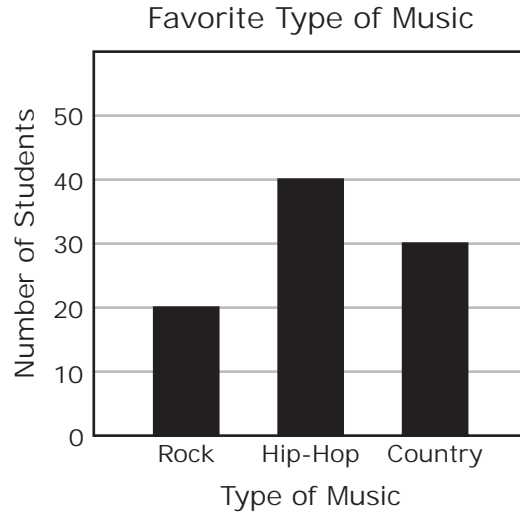
q	r
5	10.6
7	10.8
9	11.0
11	11.2

D

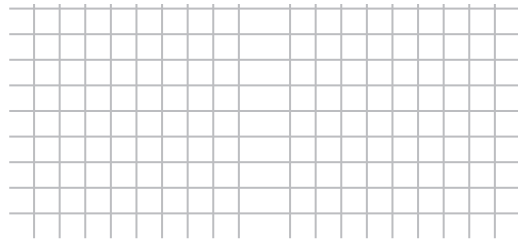
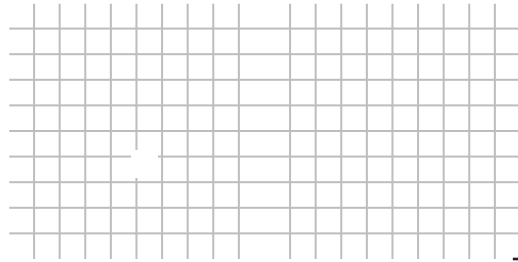
q	r
5	15.1
7	15.3
9	15.5
11	15.7

38 A recipe for cookies requires $\frac{3}{4}$ cup of butter. Rama wants to make $\frac{1}{2}$ of the recipe. How

40 Aiden asked a group of students to choose their favorite type of music from the choices of rock, hip-hop, and country. The results of the survey are shown in the graph.



Based on the graph, how many students in a class of 360 students would



Color	Number of Marbles
Black	≠ ≠ ≠
Yellow	≠ ≠
Green	≠ ≠ ≠ II
Red	≠
White	≠ III

44 The cost of downloading one song from a website is \$0.99. Which equation can be used to find t , the cost in dollars of downloading n songs?

F $t = 0.99 + n$

G $n = 0.99 + t$

H $t = 0.99n$

J $n = 0.99t$

45 Students in Mrs. Guerro's class must complete at least 40 math problems for homework every week. The table shows the progress of four students on Wednesday.

Homework Progress

Student	Amount Completed
Katie	0.4
D'Angelo	$\frac{45}{40}$
Grace	100%
Jonah	$\frac{2}{3}$

Which list shows the amounts of homework completed in order from greatest to least?

A $0.4, \frac{2}{3}, \frac{45}{40}, 100\%$

B $\frac{45}{40}, 100\%, \frac{2}{3}, 0.4$

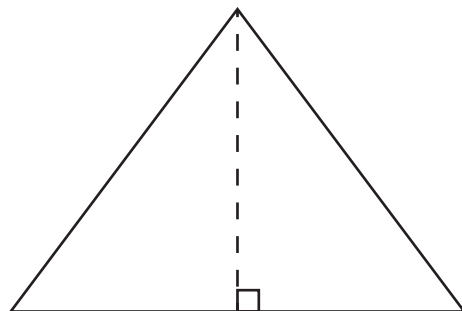
C $0.4, \frac{2}{3}, 100\%, \frac{45}{40}$

D $\frac{2}{3}, 0.4, \frac{45}{40}, 100\%$

46 What is the prime factorization of 110?

J 2 5 11

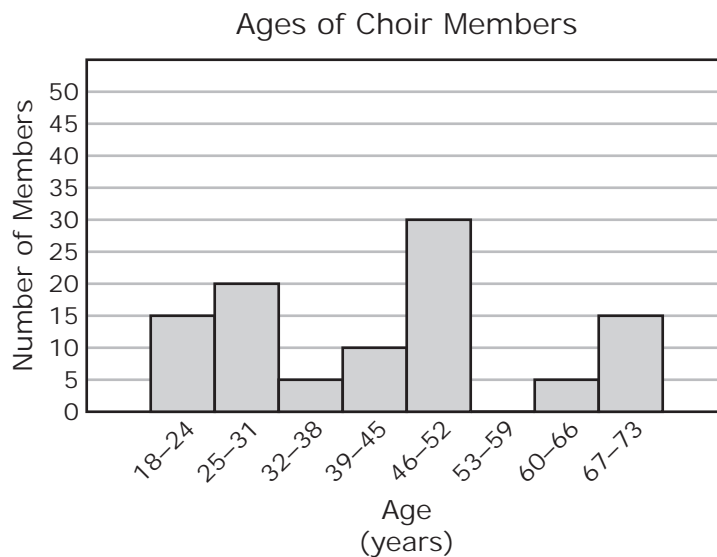
- 48 Ms. Chen will paint a triangular tile. A drawing of the tile is shown. Use the ruler provided to measure the dimensions of the tile to the nearest centimeter.



Which measurement is closest to the area of the tile in square centimeters?

- F 12 cm^2
- G 24 cm^2
- H 15 cm^2
- J 30 cm^2

49 A choir director made a histogram showing the ages of the members of the choir.



Which statement about the data in the histogram must be true?

- A More than half the members are from 46 to 73 years old.
- B There are more men than women in the choir.
- C The choir has a total of 100 members.
- D Exactly 20 members are less than 32 years old.

50 A student needs to collect at least 10 flowers for a science project. The student has already collected 3 flowers. The inequality shown can be used to find n the number of flowers the student still needs.

$$n + 3 \geq 10$$

Which inequality represents the solution set for this situation?

- F $n \geq 13$
- G $n \leq 13$
- H $n \geq 7$
- J $n \leq 7$

Whipossi of

- 51 To make pink paint, Sylvia mixes 7 cups of white paint to every 3 cups of red paint. Which table

Pink Paint

A

White Paint, (cups)	7	49	343	2,401
Red Paint, (cups)	3	9	27	81

Pink Paint

B

White Paint, (cups)	7	8	9	10
Red Paint, (cups)	3	4	5	6

Pink Paint

C

White Paint, (cups)	7	14	21	28
Red Paint, (cups)	3	6	9	12

Pink Paint

D

White Paint, (cups)	7	6	5	4
Red Paint, (cups)	3	4	5	6

52 Which two expressions are equivalent?

F $9(6 + x)$
 $9 \cdot 6 + 9 \cdot x$

G $x + (8 \cdot 9)$
 $(x + 8) \cdot 9$

H $8 \cdot 6 \div x$
 $8 \cdot x \div 6$

J 6

STAAR
GRADE 6