

Summer Math Packet for Students Entering 6th Grade

# Mid-Year Review

## Test Prep

### Multiple Choice

**Fill in the circle next to the correct answer.**

- Which of the following is 3,450,026 in word form? (*Lesson 1.1*)
  - Three million, four hundred fifty thousand, twenty-six
  - Three million, four hundred thousand fifty, twenty-six
  - Three million, fifty thousand four hundred, twenty-six
  - Three million, forty-five thousand, twenty-six
- Which number is the greatest? (*Lesson 1.3*)

<input type="radio"/> (A) 15,265	<input type="radio"/> (B) 93,216
<input type="radio"/> (C) 320,182	<input type="radio"/> (D) 320,128
- Which number when rounded to the nearest thousand is 23,000? (*Lesson 1.4*)

<input type="radio"/> (A) 22,097	<input type="radio"/> (B) 22,499
<input type="radio"/> (C) 23,400	<input type="radio"/> (D) 23,501
- Simplify  $20 + 10 \times 19 - 7$ . (*Lesson 2.6*)

<input type="radio"/> (A) 140	<input type="radio"/> (B) 203
<input type="radio"/> (C) 360	<input type="radio"/> (D) 563

5. Which is 1,000 less than the product of 3,021 and 79? (Lesson 2.3)
- (A) 2,100 (B) 4,100  
(C) 237,659 (D) 239,659
6. Which is the difference between the value of the digit 6 in 2,300,628 and in 846,150? (Lesson 1.2)
- (A) 600 (B) 5,400  
(C) 5,522 (D) 6,000
7. Which is the remainder when 4,885 is divided by 21? (Lesson 2.5)
- (A) 12 (B) 13  
(C) 14 (D) 15
8. Express  $\frac{8}{11} \div 4$  in simplest form. (Lesson 4.6)
- (A)  $\frac{2}{11}$  (B)  $\frac{8}{44}$   
(C)  $\frac{1}{11}$  (D)  $\frac{4}{11}$
9. Find the difference:  $\frac{3}{4} - \frac{3}{8}$ . (Lesson 3.2)
- (A)  $\frac{5}{8}$  (B)  $\frac{3}{8}$   
(C)  $\frac{1}{2}$  (D)  $\frac{1}{4}$
10. Find the product:  $\frac{3}{4} \times \frac{8}{12}$ . (Lesson 4.1)
- (A)  $\frac{1}{2}$  (B)  $\frac{2}{3}$   
(C)  $\frac{5}{12}$  (D)  $\frac{11}{16}$

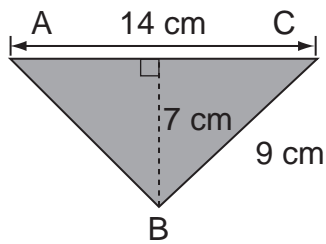
11. Estimate the sum of  $\frac{6}{7}$  and  $\frac{3}{5}$ . (Lesson 3.1)

- (A) 0 (B)  $\frac{1}{2}$   
(C)  $1\frac{1}{2}$  (D) 1

12. What is the difference between  $3\frac{1}{2}$  and  $1\frac{1}{4}$ ? (Lesson 3.6)

- (A)  $2\frac{1}{4}$  (B)  $3\frac{1}{4}$   
(C)  $4\frac{3}{4}$  (D)  $4\frac{1}{2}$

13. Find the area of triangle  $ABC$ . (Lesson 6.2)



- (A)  $126 \text{ cm}^2$   
(B)  $98 \text{ cm}^2$   
(C)  $63 \text{ cm}^2$   
(D)  $49 \text{ cm}^2$

14. Simplify  $4x + 6 - 2x - 1$ . (Lesson 5.2)

- (A)  $6x + 7$  (B)  $4x + 3$   
(C)  $8x + 6$  (D)  $2x + 5$

15. For what value of  $y$  will the inequality  $3y + 4 < 8$  be true? (Lesson 5.3)

- (A)  $y = 1$  (B)  $y = 2$   
(C)  $y = 3$  (D)  $y = 4$

16. Glass A contains 236 milliliters of milk. Glass B contains 420 milliliters of milk. What is the ratio of the amount of milk in Glass A to that in Glass B? (Lesson 7.3)

- (A) 89 : 135 (B) 119 : 165  
(C) 479 : 660 (D) 59 : 105

## Short Answer

Read the questions carefully. Write your answers in the space provided. Show your work.

17. What is the missing number in the box? (Lesson 1.2)

$$87,412 = 80,000 + \boxed{\phantom{000}} + 400 + 10 + 2 \quad \underline{\hspace{2cm}}$$

18. Order the numbers from greatest to least. (Lesson 1.3)

35,928      164,239      35,982      916,236

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19. Rounding to the nearest thousand, what is the least number that rounds to 32,000? (Lesson 1.4)


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20. Find the product of 238 and 4,000. (Lesson 2.2)

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21. There are 215 Grade 5 students in Cherrywood school. Each student spends \$17 on a dictionary. How much in all do the students spend on the dictionary? (Lesson 2.7)

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22.  Mr. Hull is buying computer equipment for his company. The equipment costs \$45,900. He pays \$5,300 for the first payment. He then pays the rest of the amount in equal payments for 14 months. Find the amount he has to pay each month. (Lesson 2.7)

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**23.** Simplify  $(2 + 4) \times 7 - 6 + 11$ . (Lesson 2.6)

\_\_\_\_\_

**24.** Express  $38 \div 6$  as a fraction in simplest form. Then rewrite the fraction as a mixed number. (Lesson 3.3)

\_\_\_\_\_

**25.** Shaun has  $24\frac{1}{2}$  ounces of beads. He has  $3\frac{3}{8}$  ounces of beads less than Tony. Find the weight of Tony's beads. (Lesson 3.7)

\_\_\_\_\_

**26.** Express  $24\frac{1}{4} - 15\frac{1}{2}$  as a decimal. (Lessons 3.3 and 3.6)

\_\_\_\_\_

**27.** Lita jogged  $7\frac{3}{10}$  kilometers on Friday. She jogged  $1\frac{3}{4}$  kilometers more on Saturday. How many kilometers did she jog on both days? Give your answer as a decimal. (Lesson 3.7)

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**28.** Multiply  $\frac{70}{6}$  by  $\frac{18}{4}$ . Express the product as a mixed number in simplest form. (Lesson 4.3)

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**29.** Jamal runs  $1\frac{2}{5}$  miles a day to train for a race.

**a.** If he runs the same distance for 3 days a week, what is the distance he runs in one week?

**b.** If he keeps to this training regime for 8 weeks, what is the total distance he will run in 8 weeks? (Lesson 4.5)

**a.** \_\_\_\_\_

**b.** \_\_\_\_\_

- 30.** A ball of string  $\frac{9}{10}$  meter long is cut into 3 pieces of the same length.

Find the length of each piece. (Lesson 4.6)

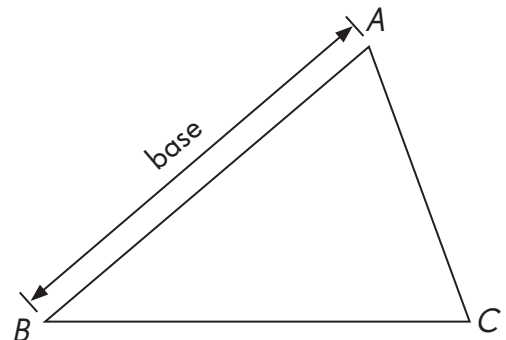
- 31.** 3 batteries cost  $\$5r$  and 8 folders cost  $\$2r$ . Jason bought 6 batteries and 4 folders. How much does he pay?

Give your answer in terms of  $r$ . (Lesson 5.4)

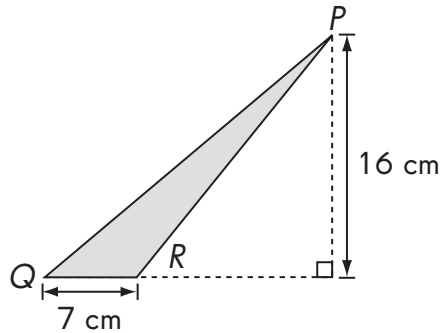
- 32.** Solve this equation. (Lesson 5.3)


$$4a - 8 = a + 4$$

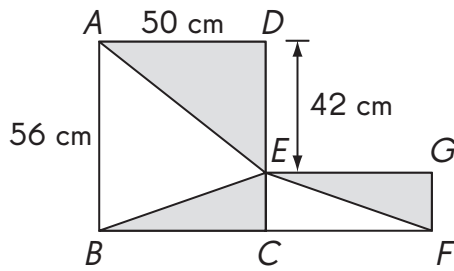
- 33.** The base of the triangle  $ABC$  is as given. Label its height. (Lesson 6.1)




34. Find the area of triangle  $PQR$ . (Lesson 6.2)



35.   $ABCD$  and  $ECFG$  are rectangles.  $BC = CF$ . What is the total area of the shaded parts of the figure? (Lesson 6.2)



36.  The ratio of the masses of flour in two bags is 5 : 7. The heavier bag contains 1,120 grams of flour. What is the total mass of flour in both bags? (Lesson 7.3)

37. Rachel, Sally, and Fabio share a pie in the ratio 1 : 2 : 4. What fraction of the pie does Sally get? (Lesson 7.6)



38.



The lengths of three sides of a triangle are in the ratio 3 : 4 : 5. The perimeter of the triangle is 156 centimeters. What is the difference in length between the longest and shortest sides?  
(Lesson 7.6)

\_\_\_\_\_

39.



Look for a pattern in this set of figures. (Lesson 7.6)



Figure 1

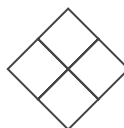


Figure 2

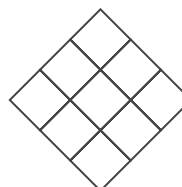


Figure 3

?

Figure 4


<b>Figure</b>	1	2	3	4		?
<b>Number of Unit Squares</b>	1	4	9	?		169

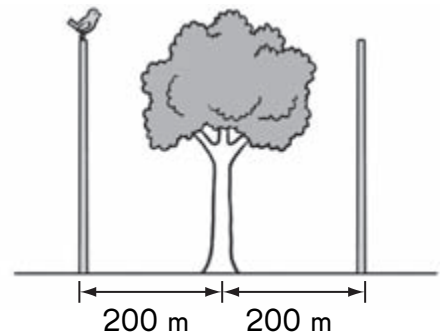
a. How many unit squares are in Figure 4? \_\_\_\_\_


b. Which figure in this pattern will have 169 small squares? \_\_\_\_\_

## Extended Response

**Solve. Show your work.**

40.  Poles are placed an equal distance apart along a 6-kilometer road. There is a tree in between every two poles. The figure shows the distance between a tree and two poles. Poles are placed at the start and end of the road. How many poles are there? (*Lesson 2.4*)



41.  A whole number when divided by 4 gives a remainder of 3.  
The same whole number when divided by 6 gives a remainder of 1.  
The number is between 70 and 85. What is the number? (*Lesson 2.5*)



- 42.** Sarah earns \$525 more than Andrew each month. They each spend \$1,250 a month and save the rest. Sarah does not have any savings at first. After 11 months, she has \$8,250 in savings. How much does Andrew earn in a year? (*Lesson 2.7*)

- 43.** Ivan caught a total of  $7\frac{2}{5}$  pounds of fish one day. Of the fish caught,  $4\frac{5}{8}$  pounds were sea bass and the rest were mackerel. He gave away  $1\frac{7}{8}$  pounds of mackerel. How many pounds of mackerel did he have left? Give your answer as a decimal. (*Lesson 3.7*)

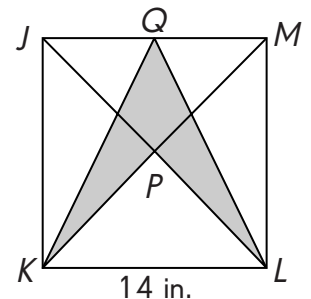
**44.** There were  $2\frac{4}{5}$  quarts of milk in Container A and some milk in Container B. Lisa poured  $1\frac{2}{5}$  quarts of milk each into Container A and Container B. In the end, the total volume of milk in the two containers was 10 quarts. How many quarts of milk were in Container B at first? Give your answer as a decimal. (*Lesson 3.7*)

**45.** Tyrone read a book for his school project. On the first day, he read 40 pages. On the second day, he read  $\frac{1}{4}$  of the remaining pages. After the second day, he still had to read  $\frac{1}{2}$  of the total number of pages to complete the book. How many pages are in the book? (*Lesson 4.2*)

- 46.** A dealership has  $9y$  cars,  $12y$  trucks and 18 vans. (Lesson 5.4)
- a.**  $4y$  cars,  $3y$  trucks and 15 vans are sold. Find the total number of vehicles remaining in terms of  $y$ .

**b.** If the value of  $y$  is 7, are there more trucks or more cars and vans at first?

- 47.** The side of square  $JKLM$  is 14 inches.  $KP = MP = JP = LP$ . Find the total area of the shaded parts. (Lesson 6.2)



**48.**



Freddie has 2 times as many comic books as David. The ratio of the number of comic books David has to the number of comic books Gary has is 5 : 3. Freddie has 110 comic books. How many comic books do David and Gary have in total? (*Lesson 7.6*)

**49.**



The ratio of the volume of water in Container A to the volume of water in Container B to the volume of water in Container C is 2 : 3 : 8. Container B contains 900 milliliters of water. (*Lesson 7.6*)

- a.** What is the volume of water in Container C?
  
  
  
  
  
  
  
  
  
  
- b.** Find the total volume of water in the three containers.

# End-of-Year Review

## Test Prep

### Multiple Choice

Shade the circle next to the correct answer.

- In 130.426, the digit 2 is in the \_\_\_\_\_ place. (Lesson 8.1)  
 (A) tens                                       (B) tenths  
 (C) hundredths                               (D) thousandths
- Use front-end estimation with adjustment to estimate  $6,189 - 3,674$ . (Lesson 1.4)  
 (A) 1,000                                       (B) 2,000  
 (C) 3,000                                       (D) 4,000
- Simplify  $48 \div 8 + 13 \times 3$ . (Lesson 2.6)  
 (A) 45     (B) 54  
 (C) 57     (D) 75
- Express  $10\frac{1}{4} - 4\frac{1}{2}$  as a decimal. (Lesson 3.3)  
 (A) 6.25     (B) 5.75  
 (C) 5.43     (D) 5.34
- Express 9.062 as a mixed number in simplest form. (Lesson 8.3)  
 (A)  $9\frac{62}{100}$      (B)  $9\frac{31}{50}$   
 (C)  $9\frac{62}{1000}$      (D)  $9\frac{31}{500}$
- What is the product of 96 and 13? (Lesson 2.3)  
 (A) 900     (B) 960  
 (C) 1,170     (D) 1,248

7. Divide 84 by 400. (Lesson 9.4)

(A) 0.21

(B) 0.84

(C) 2.1

(D) 8.4

8. Simplify  $16p + 5 - 3p - 2$ . (Lesson 5.2)

(A)  $19p + 7$

(B)  $19p - 3$

(C)  $13p + 3$

(D)  $13p - 3$

9. For what value of  $y$  will the inequality  $4y - 8 > 10$  be true? (Lesson 5.3)

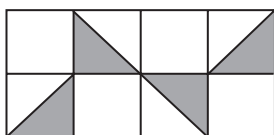
(A) 2

(B) 3

(C) 4

(D) 5

10. What percent of the figure is shaded? (Lesson 10.1)



(A) 25%

(B) 35%

(C) 40%

(D) 50%

11. The price of a cell phone is \$500. Kathleen pays 8% sales tax on the price of the cell phone. How much sales tax does she pay? (Lesson 10.4)

(A) \$400

(B) \$50

(C) \$40

(D) \$8

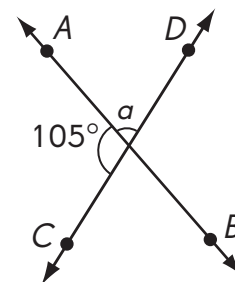
12.  $\overleftrightarrow{AB}$  and  $\overleftrightarrow{CD}$  are lines. Find the measure of  $\angle a$ . (Lesson 12.1)

(A)  $180^\circ$

(B)  $105^\circ$

(C)  $75^\circ$

(D)  $57^\circ$





- 13.** The sides of triangle  $ABC$  are in whole inches.  $AB = 5$  inches and  $BC = 11$  inches. Which of these is a possible length for  $AC$ ?

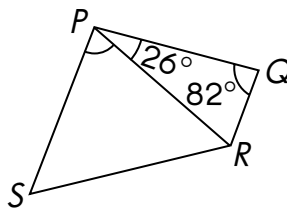
(Lesson 13.4)

- (A) 3 inches                      (B) 6 inches  
(C) 12 inches                    (D) 16 inches

- 14.** In the trapezoid  $PQRS$ ,  $\overline{PS} \parallel \overline{QR}$ . Find the measure of  $\angle SPR$ .

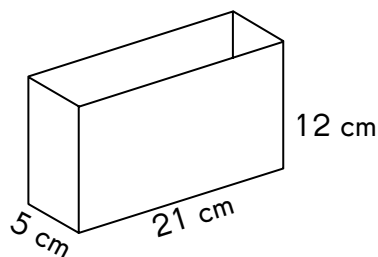
(Lesson 13.5)

- (A)  $98^\circ$   
(B)  $72^\circ$   
(C)  $52^\circ$   
(D)  $26^\circ$

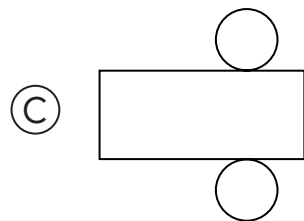
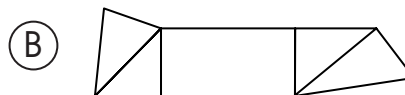
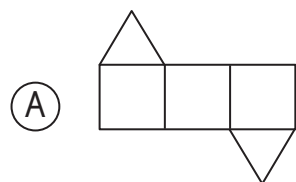


- 15.** How many 1-centimeter cubes can be put into the box? (Lesson 15.5)

- (A) 38  
(B) 1,200  
(C) 1,260  
(D) 1,620



- 16.** Which of these nets can form a triangular pyramid? (Lesson 14.1)



## Short Answer

Read the questions carefully. Write your answers in the spaces provided. Show your work.

17. The ratio of the volume of water in bucket A to the volume of water in bucket B is 3 : 5. The total volume of water in the two buckets is 56 liters. What is the volume of water in bucket B? (*Lesson 7.3*)

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18. Write 12 ones and 3 tenths 2 hundredths 5 thousandths in expanded form. (*Lesson 8.1*)

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19. What is the missing number in the equation? (*Lesson 9.4*)

$$9.42 = 9,420 \div \square$$

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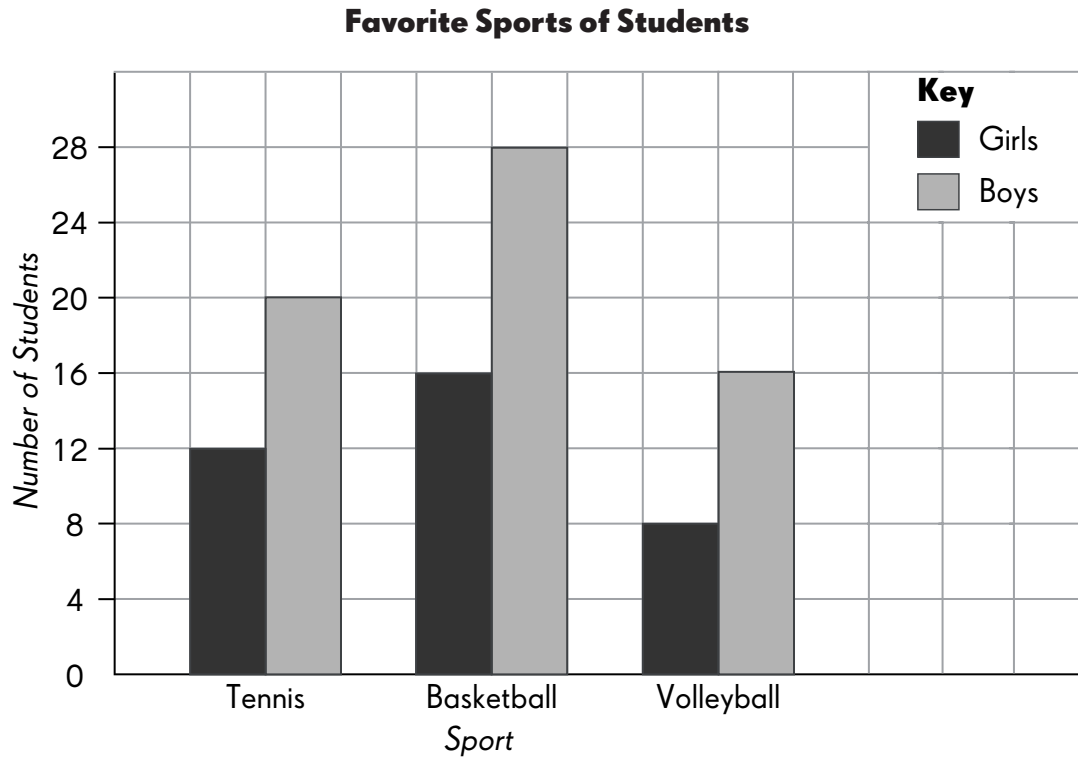
20. Order the decimals from least to greatest. (*Lesson 8.2*)  
11.05, 11.00, 11.10, 11.009

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21.  $\frac{3}{8}$  of the regular price of a digital watch is \$21. The price of the digital watch after discount is \$21. Find the dollar amount of the discount. (*Lesson 10.4*)

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Use the data in the bar graph to answer questions 22 and 23.



- 22.** For which sport is the difference between the number of boys and girls the greatest? (*Lesson 11.1*)

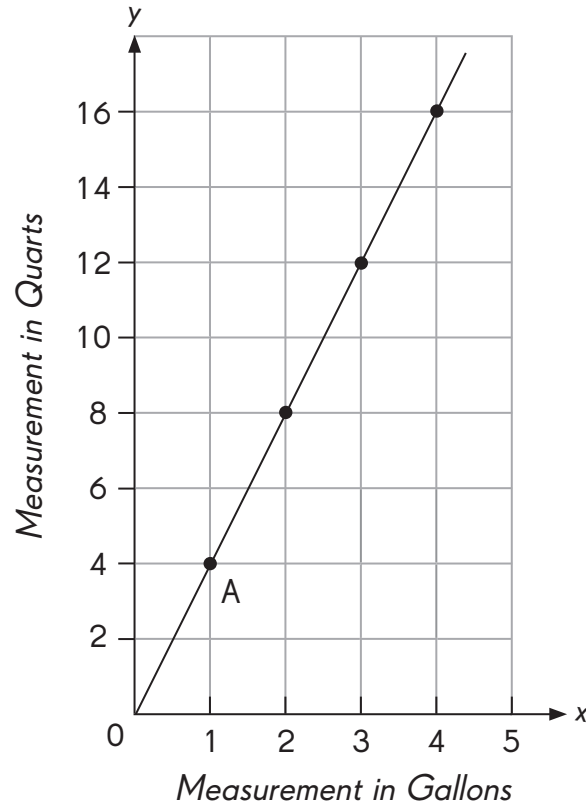
\_\_\_\_\_

- 23.** How many more boys than girls prefer tennis? (*Lesson 11.1*)

\_\_\_\_\_

Use the data in the graph to answer questions 24 and 25.

**Conversion Between Gallons and Quarts**



**24.** Mrs. Richards buys 8 quarts of milk in 4 days. How many gallons of milk does she buy? (*Lesson 11.2*)

\_\_\_\_\_

**25.** What is the equation of the graph? (*Lesson 11.2*)

\_\_\_\_\_

**26.** Mrs. Mani has 1 orange, 1 apple, 1 peach and 1 apricot. She has 3 different flavored yogurt bars. She packs one fruit and one yogurt bar into a lunch box. Find the number of combinations she can pack in one box. (*Lesson 11.3*)

\_\_\_\_\_

- 27.** A box contains 6 red pens, 4 blue pens, 8 green pens, and some black pens. Leslie picks a pen and returns it to the box each time. The outcomes are recorded in the table.

Number of Times a Red Pen is Picked	Number of Times a Blue Pen is Picked	Number of Times a Green Pen is Picked	Number of Times a Black Pen is Picked
8	5	14	3

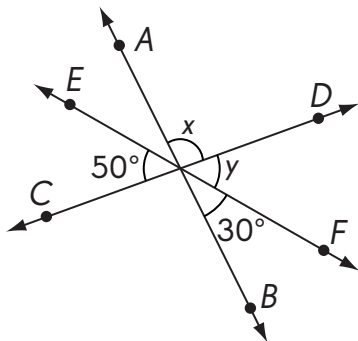
- a.** What is the experimental probability of drawing a green pen?  
(Lesson 11.4)

\_\_\_\_\_

- b.** If the theoretical probability of drawing a black pen is  $\frac{1}{10}$ , how many black pens are in the box? (Lesson 11.4)

\_\_\_\_\_

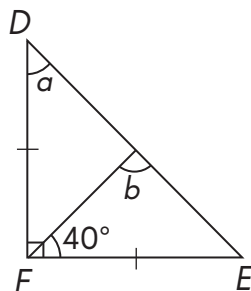
- 28.**  $\overleftrightarrow{AB}$ ,  $\overleftrightarrow{CD}$  and  $\overleftrightarrow{EF}$  are lines. Find the measures of  $\angle x$  and  $\angle y$ .  
(Lessons 12.1 and 12.3)



$m\angle x =$  \_\_\_\_\_

$m\angle y =$  \_\_\_\_\_

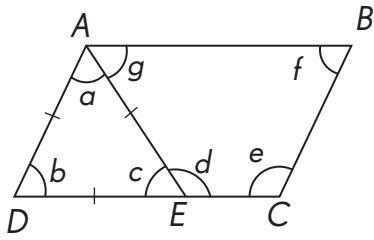
- 29.** In triangle  $DEF$ ,  $DF = EF$ . Find the measures of  $\angle a$  and  $\angle b$ .  
(Lessons 13.2 and 13.3)



$m\angle a =$  \_\_\_\_\_

$m\angle b =$  \_\_\_\_\_

- 30.**  $ABCD$  is a parallelogram and  $ADE$  is an equilateral triangle. Identify all the angles that have the same measure as  $\angle f$ . (Lessons 13.3 and 13.5)




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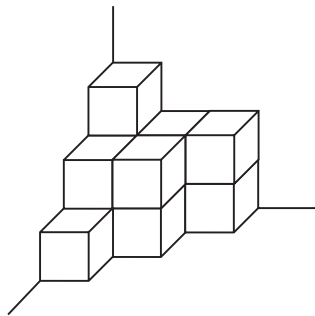
- 31.** Brian has \$50. He buys 10 similar books and has  $x$  dollars left. What is the cost of each book? (Lesson 5.4)

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- 32.** A solid figure has 2 flat surfaces, 1 curved surface, no edges and no vertices. Name this solid figure. (Lesson 14.2)

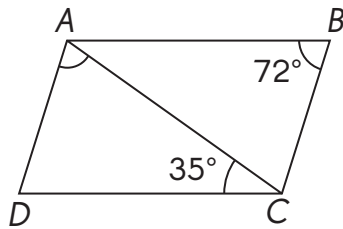
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- 33.** How many unit cubes are used to build the solid? (Lesson 15.1)



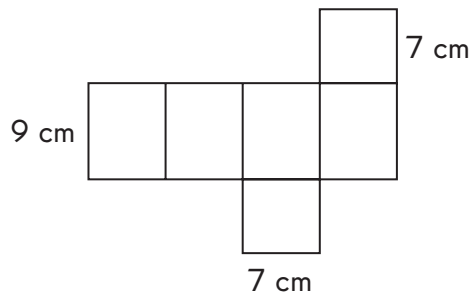

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- 34.**  $ABCD$  is a parallelogram. Find the measure of  $\angle DAC$ . (Lesson 13.5)



\_\_\_\_\_

- 35.** The net of a square prism is as given. Use the net to find the surface area of the prism. (Lesson 15.3)

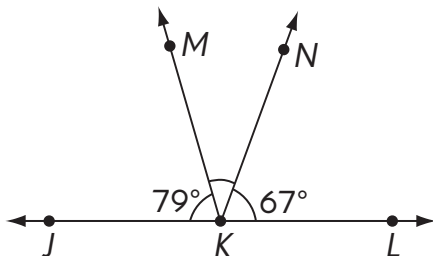


\_\_\_\_\_

- 36.** Express  $3\frac{1}{5} + 2\frac{1}{20}$  as a decimal. (Lesson 3.5)

\_\_\_\_\_

- 37.**  $\overleftrightarrow{JL}$  is a line. Find the measure of  $\angle MKN$ . (Lesson 12.1)



\_\_\_\_\_

## Extended Response

**Solve. Show your work.**

- 38.** There are 450 seats in a theater. 48% of the seats are occupied. How many seats are not occupied?
- 39.** The area of a plot of land is 2,496 square meters. A small part of the land is fenced. The ratio of the area of the plot of land to the area that is not fenced is 48 : 31. What is the area of the land that is not fenced?



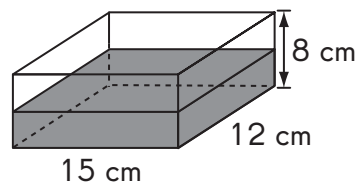
- 40.** Harry buys a sofa set that costs \$2,000. He pays for it by installments at an interest rate of 5% per year. What is the total amount he has to pay at the end of one year?
- 41.** Mrs. Jacobs buys 20 kilograms of rice at \$0.84 per kilogram. She buys 700 grams of shrimp at \$1.02 per 100 grams. How much does she spend in total?

**42.** A fish tank measures 40 centimeters by 25 centimeters by 24 centimeters. It is filled with water from a tap. The fish tank is  $\frac{5}{8}$  full in 6 minutes. Find the volume of water that flows from the tap each minute.

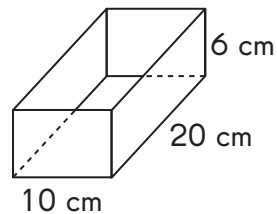
**43.** Mrs. Jackson has \$90. She spends  $\frac{1}{4}$  of her money on food,  $\frac{1}{2}$  of the remainder on clothes and saves the rest. How much does she save?

- 44.** Team A has 42 members. Team B has 18 more members than team A. What percent of the members from team B must be transferred to team A so that team A has as many members as team B?

- 45.** An equal amount of water is poured into two empty tanks, *P* and *Q*. Tank *P* is then  $\frac{1}{2}$ -filled. What fraction of tank *Q* is filled with water?



P



Q

- 46.** There is some water in a tank. Water is then poured into the tank until the volume of water is 8 times as much as the initial volume of water in the tank. When another 16.75 liters of water is added, the total volume of water in the tank becomes 20.35 liters. How much water is in the tank at first? Give your answer in liters.

Name \_\_\_\_\_

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**Pre-Course**

**Pre-Course Test**

**Multiply or divide.**

1.  $4.5 \div 0.9$

2.  $34.1 \div 5.5$

3.  $2.7(7.8)$

4.  $\frac{6}{7} \cdot \frac{5}{9}$

5.  $\frac{4}{5} \div \frac{8}{11}$

6.  $\frac{3}{8} \cdot \frac{4}{9}$

7. You need to buy 5 notebooks for your classes at school. Each notebook costs \$2.79. What is the total cost of 5 notebooks before tax?

**Complete the statement using  $<$ ,  $>$ , or  $=$ .**

8.  $\frac{4 \text{ tables}}{3 \text{ groups}}$  \_\_\_\_\_  $\frac{6 \text{ tables}}{5 \text{ groups}}$

9.  $\frac{66 \text{ pages}}{2 \text{ hours}}$  \_\_\_\_\_  $\frac{99 \text{ pages}}{3 \text{ hours}}$

10. You have \$50 in your savings account. Each week you deposit \$5 in your account. Write an expression that models the situation.

**Solve the equation.**

11.  $x + 5 = 10$

12.  $x - 2 = 6$

13.  $x - 1 = 9$

14.  $7 + x = 13$

15.  $5x = 65$

16.  $\frac{x}{3} = 11$

17. What is the surface area of a rectangular prism with length 5 centimeters, width 2 centimeters, and height 3 centimeters?

**Tell whether the two expressions are equivalent.**

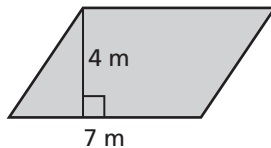
18.  $5 + 3b$ ;  $3b + 5$

19.  $5(h + 7)$ ;  $5h + 35$

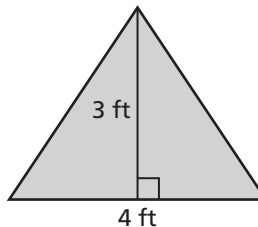
20.  $(2 - c)4$ ;  $2 - 4c$

**Find the area of the figure.**

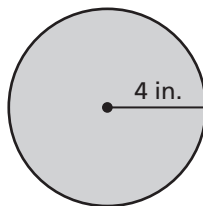
21.



22.



23. What is the circumference of the circle? Use 3.14 for  $\pi$ .



**Answers**

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_

6. \_\_\_\_\_

7. \_\_\_\_\_

8. **See left.**

9. **See left.**

10. \_\_\_\_\_

11. \_\_\_\_\_

12. \_\_\_\_\_

13. \_\_\_\_\_

14. \_\_\_\_\_

15. \_\_\_\_\_

16. \_\_\_\_\_

17. \_\_\_\_\_

18. \_\_\_\_\_

19. \_\_\_\_\_

20. \_\_\_\_\_

21. \_\_\_\_\_

22. \_\_\_\_\_

23. \_\_\_\_\_

**Pre-Course**

**Pre-Course Test (continued)**

**Write the decimal as a percent.**

24. 0.89                      25. 2.37                      26. 0.0029

**Write the percent as a decimal.**

27. 3%                      28. 78%                      29. 500%

30. In a survey,  $\frac{17}{25}$  of the people surveyed have a cat. What percent of the people surveyed have a cat?

**Order the numbers from least to greatest.**

31.  $\frac{5}{8}$ , 60%, 0.64                      32. 34%,  $\frac{4}{15}$ , 0.3                      33. 0.57, 5.8%,  $\frac{14}{25}$

**Estimate the sum or product.**

34. 1.52(98)                      35. 2.04(3.97)                      36. 4.42 + 5.91

**Find the mean, median, mode(s), and range of the data set.**

37. 5, 9, 12, 3, 4, 5, 7, 14, 13                      38. 1, 7, 2, 3, 9, 4, 6, 10

39. The following data are the numbers of customers at a coffee shop over a 10-day period.

135, 124, 140, 122, 409, 132, 119, 128, 136, 125

Which measure of center best represents the daily average number of customers at the coffee shop? Explain your reasoning.

**Multiply or divide.**

40.  $56 \times 18$                       41.  $656 \div 41$                       42.  $184 \div 23$

**Write the fraction as a decimal.**

43.  $\frac{13}{20}$                       44.  $\frac{3}{8}$                       45.  $\frac{21}{40}$

**Answers**

24. \_\_\_\_\_  
 25. \_\_\_\_\_  
 26. \_\_\_\_\_  
 27. \_\_\_\_\_  
 28. \_\_\_\_\_  
 29. \_\_\_\_\_  
 30. \_\_\_\_\_  
 31. \_\_\_\_\_  
 32. \_\_\_\_\_  
 33. \_\_\_\_\_  
 34. \_\_\_\_\_  
 35. \_\_\_\_\_  
 36. \_\_\_\_\_  
 37. \_\_\_\_\_  
 38. \_\_\_\_\_  
 39. \_\_\_\_\_  
 40. \_\_\_\_\_  
 41. \_\_\_\_\_  
 42. \_\_\_\_\_  
 43. \_\_\_\_\_  
 44. \_\_\_\_\_  
 45. \_\_\_\_\_

## Pre-Course Test Item Analysis

Item Number	Skills
1	dividing decimals
2	dividing decimals
3	multiplying decimals
4	multiplying fractions
5	dividing fractions
6	multiplying fractions
7	multiplying decimals
8	comparing rates
9	comparing rates
10	writing expressions to represent situations
11	solving one-step equations
12	solving one-step equations
13	solving one-step equations
14	solving one-step equations
15	solving one-step equations
16	solving one-step equations
17	finding the surface area of a rectangular prism
18	applying the comm. property
19	applying the distributive property
20	applying the distributive property
21	finding the area of a parallelogram
22	finding the area of a triangle
23	finding the circumference of a circle

Item Number	Skills
24	converting decimals to percents
25	converting decimals to percents
26	converting decimals to percents
27	converting percents to decimals
28	converting percents to decimals
29	converting percents to decimals
30	converting fractions to percents
31	ordering rational numbers
32	ordering rational numbers
33	ordering rational numbers
34	estimating product of decimals
35	estimating product of decimals
36	estimating sum of decimals
37	finding measures of center and range
38	finding measures of center and range
39	determining measures of center
40	multiplying whole numbers
41	dividing whole numbers
42	dividing whole numbers
43	converting fractions to decimals
44	converting fractions to decimals
45	converting fractions to decimals





Name: \_\_\_\_\_

Date: \_\_\_\_\_

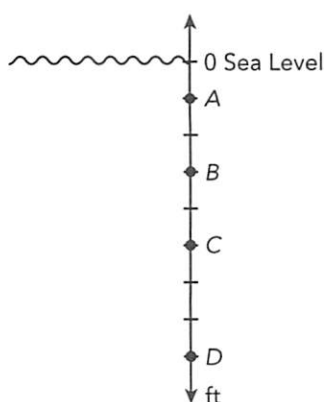
# End-of-Course Test A



## Multiple Choice (20 × 2 points = 40 points)

Fill in the circle next to the correct answer.

- What is the greatest common factor of 36 and 126?  
 (A) 6       (B) 9       (C) 12       (D) 18
- Find the value of  $7^2 - \sqrt{16} + 5^3$ .  
 (A) 9       (B) 21       (C) 166       (D) 170
- The figure shows the depths beneath the surface of the ocean. If each interval on the scale represents 5 feet, at what point on the scale is a diver if he is 15 feet beneath the surface of the ocean?



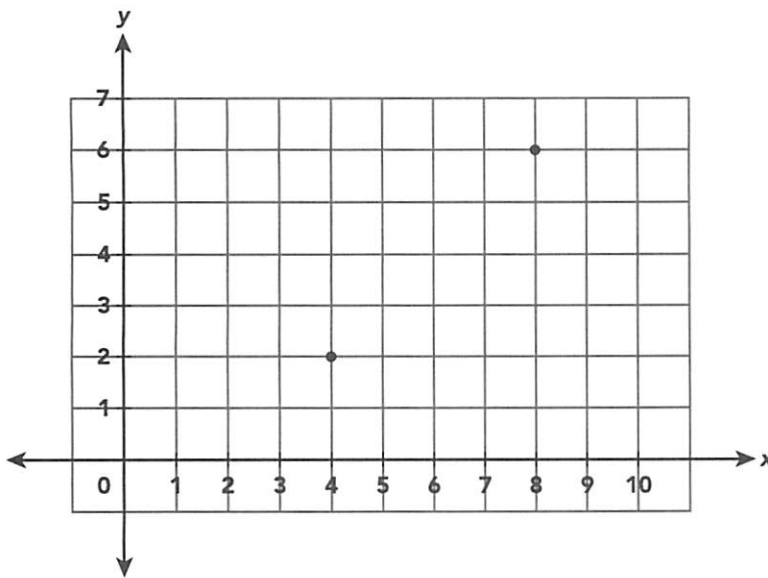
- (A) A
- (B) B
- (C) C
- (D) D

- Which of these statements are correct?  
 (i)  $25 < -25$     (ii)  $|-23| < |-31|$     (iii)  $-18 > -19$     (iv)  $|69| > |-69|$   
 (A) (i) and (ii)     (B) (i) and (iii)     (C) (ii) and (iii)     (D) (ii) and (iv)
- What is the value of  $\frac{1}{2} \div \frac{1}{4}$ ?  
 (A)  $\frac{1}{8}$        (B)  $\frac{3}{4}$        (C) 2       (D) 8
- The ratio of the number of red buttons to the number of yellow buttons in a box is 3 : 4. If there are 36 yellow buttons, how many red buttons are there?  
 (A) 12       (B) 27       (C) 32       (D) 36
- A typist can type 3 pages in 20 minutes. How many pages can he type in an hour?  
 (A) 9       (B) 12       (C) 15       (D) 18

Name: \_\_\_\_\_

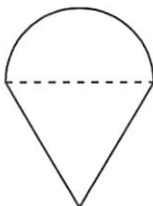
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8. Nina had 56 inches of ribbon. She used 42 inches to make some decorations. What percent of the ribbon did Nina use to make the decorations?
- (A) 14%      (B) 25%      (C) 42%      (D) 75%
9. Carlos budgeted \$2,000 to spend on a vacation. If he spent \$150 each day, which expression represents how much money Carlos had left after  $x$  days?
- (A)  $1,850x$  dollars      (B)  $(2,000 - 150x)$  dollars  
 (C)  $150x$  dollars      (D)  $(2,000 + 150x)$  dollars
10. What is the value of the expression  $3(x + 2) - \frac{4x}{5}$  when  $x = 10$ ?
- (A) 8      (B) 12      (C) 24      (D) 28
11. Simplify  $2(5 + w) + 3(w + 2)$ .
- (A)  $2w + 12$       (B)  $2w + 16$       (C)  $5w + 16$       (D)  $16w$
12. What is the solution of the equation  $\frac{4}{7}p = 56$ ?
- (A) 8      (B) 14      (C) 32      (D) 98
13. Samuel plots two points on the coordinate plane below. He wants to plot two more points and then connect all four points to form a square. Which two points should Samuel plot to form a square?



- (A) (4, 2) and (8, 6)  
 (B) (4, 6) and (6, 6)  
 (C) (4, 2) and (6, 2)  
 (D) (4, 6) and (8, 2)

14. The figure is made up of a semicircle of radius 10.5 inches and an equilateral triangle. Find the perimeter of the figure. Use  $\frac{22}{7}$  as an approximation for  $\pi$ .

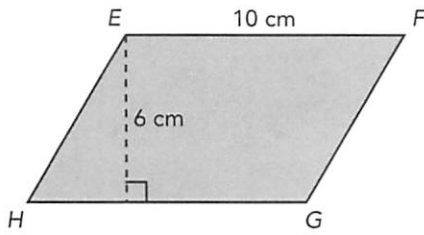


- (A) 54 in.  
 (B) 75 in.  
 (C) 96 in.  
 (D) 108 in.

Name: \_\_\_\_\_

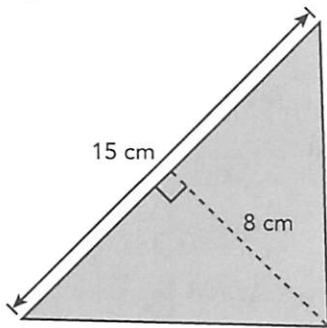
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15. Parallelogram  $EFGH$  has the dimensions shown below.

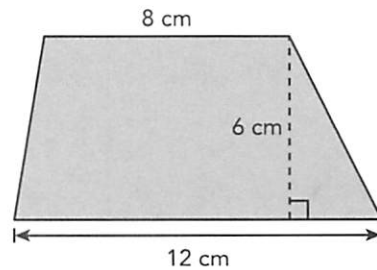


Which of the following figures **do not** have the same area as parallelogram  $EFGH$ ?

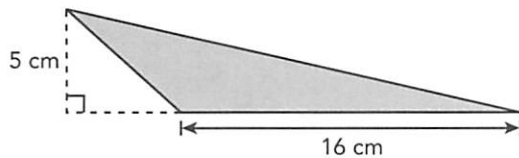
(A)



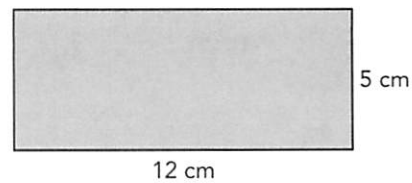
(B)



(C)



(D)



16. Max set the sprinkler system in a yard so that each pop-up sprinkler head would water a circular area with a radius of 14 feet. What area of the lawn will one sprinkler head cover? Use  $\frac{22}{7}$  as an approximation for  $\pi$ .

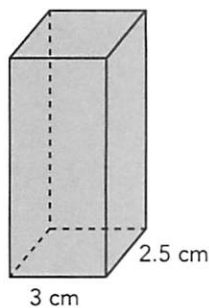
(A) 88 ft<sup>2</sup>

(B) 176 ft<sup>2</sup>

(C) 616 ft<sup>2</sup>

(D) 2,464 ft<sup>2</sup>

17. The volume of the rectangular solid shown is 52.5 cubic centimeters. What is its height?



(A) 7 cm

(B) 21 cm

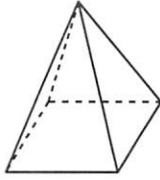
(C) 45 cm

(D) 47 cm

Name: \_\_\_\_\_

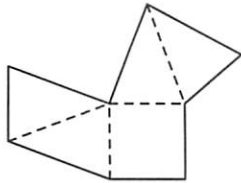
Date: \_\_\_\_\_

18. Bob folded a net to make the solid shown below.

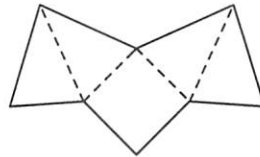


Which of the following nets could represent the net Bob folded?

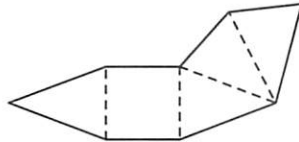
(A)



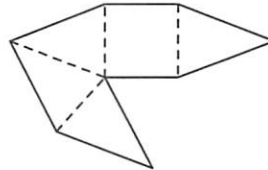
(B)



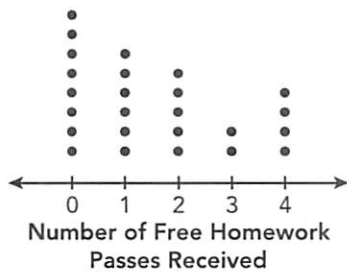
(C)



(D)



19. The dot plot shows the number of free homework passes received by students in a class. Each dot represents 1 student.



What percent of the students in the class did not receive a free homework pass?

- (A) 8%      (B) 16%      (C) 32%      (D) 68%

20. The number of e-mails received daily at a business for two weeks are shown below.

19, 28, 16, 10, 18, 22, 15, 15, 11, 26

What are the mean and median number of e-mails received in the two weeks?

- (A) mean = 15 e-mails, median = 17 e-mails  
 (B) mean = 15 e-mails, median = 20 e-mails  
 (C) mean = 18 e-mails, median = 17 e-mails  
 (D) mean = 18 e-mails, median = 20 e-mails

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## Short Answer and/or Constructed Response

(Questions 21 to 35:  $15 \times 2$  points = 30 points, Questions 36 to 40:  $5 \times 4$  points = 20 points, Questions 41 and 42:  $2 \times 5$  points = 10 points)

### Write your answer in the space given.

21. Draw a horizontal number line to represent a set of mixed numbers from 2 to 5, with an interval of  $\frac{1}{4}$  between each pair of mixed numbers.

22. Write 150 as a product of its prime factors.

\_\_\_\_\_

23. Dexter mows his lawn every 12 days and washes his windows every 30 days. He mowed his lawn and washed his windows today. How many days from now will it be until he next mows his lawn and washes his windows on the same day?

\_\_\_\_\_

24. A box has a shipping limit of 30 pounds. If a factory wants to ship toys that weigh 0.75 pound each, how many toys can fit in a box?

\_\_\_\_\_

25. Write  $56 : 72$  in simplest form.

\_\_\_\_\_

26. Monica's group receives \$6 for every dozen paper flowers they sell at a charity bazaar. At this rate, how many paper flowers must they sell if they want to raise \$300?

\_\_\_\_\_

Name: \_\_\_\_\_

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27. If 25% of a number is 20, what is 60% of the number?

\_\_\_\_\_

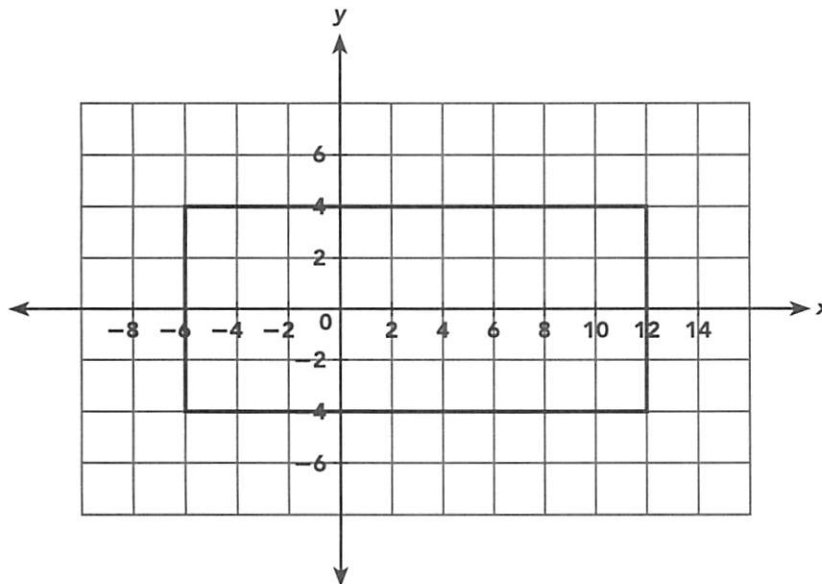
28. Janice has twice as many stickers as Melvin. Ryan has 5 more stickers than Janice. If Melvin has  $h$  stickers, how many stickers does Ryan have?

\_\_\_\_\_

29. The lake at which Maggie is fishing has a 36 fish limit. If she has already caught 7 fish, write an inequality for the number of fish,  $f$ , she can catch.

\_\_\_\_\_

30. The diagram shows the plan of a rectangular vegetable patch. The side length of each grid square is 2 meters. Find the perimeter of the vegetable patch.



\_\_\_\_\_

31. What is the area of the shaded part of the figure?

