

Class Name : **Math 6**

Instructor Name : **Ms. Swanson**

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

Instructor Note : \_\_\_\_\_

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1. Divide. Write your answer in simplest form.

$$\frac{9}{4} \div \frac{3}{8}$$

2. Divide. Write your answer as a fraction or mixed number in simplest form.

$$5\frac{2}{5} \div 7$$

3. Divide.

$$8463 \div 7$$

4. Divide. Give the quotient and remainder.

$$7087 \div 43$$

5. Add.

$$9.4 + 3.38 + 9.87$$

6. Multiply.

$$0.9 \times 0.03 =$$

$$0.8 \times 0.7 =$$

7. Divide.

$$1.985 \div 0.1$$

8.

(a) Find the greatest common factor (GCF) of 63 and 35.

(b) Use the GCF to factor  $63 - 35$ .

(a) GCF =     

(b)  $63 - 35 = \underline{\quad} \times (\underline{\quad} - \underline{\quad})$

9. Find the least common multiple (LCM) of 2 and 3.

10. Fill in the blanks below.

(a) The temperature was 60 degrees above 0 (in Fahrenheit) today.  
Write a signed number to represent this temperature.

▮

(b) Chau withdrew 80 dollars from his checking account.  
Write a signed number to represent this change in his account.

▮

11. Amanda is riding in a bike race that goes through a valley and a nearby mountain range. The table gives the altitudes (in feet above sea level) for the five checkpoints in the race.

Use the table to answer the questions.

Checkpoint	Altitude (feet above sea level)
Checkpoint 1	0
Checkpoint 2	2710
Checkpoint 3	-112
Checkpoint 4	-192
Checkpoint 5	1235

(a) Which checkpoint is the farthest above sea level?

- Checkpoint 1
- Checkpoint 2
- Checkpoint 3
- Checkpoint 4
- Checkpoint 5

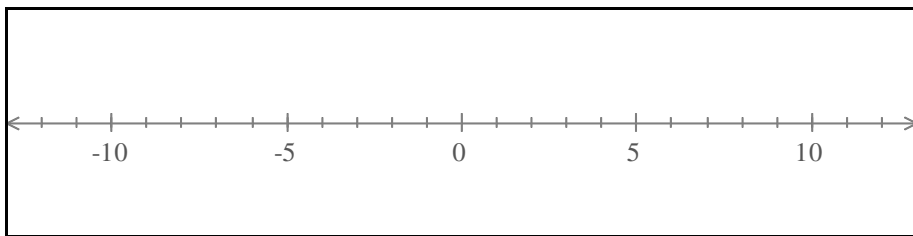
(b) Which checkpoint is the farthest below sea level?

- Checkpoint 1
- Checkpoint 2
- Checkpoint 3
- Checkpoint 4
- Checkpoint 5

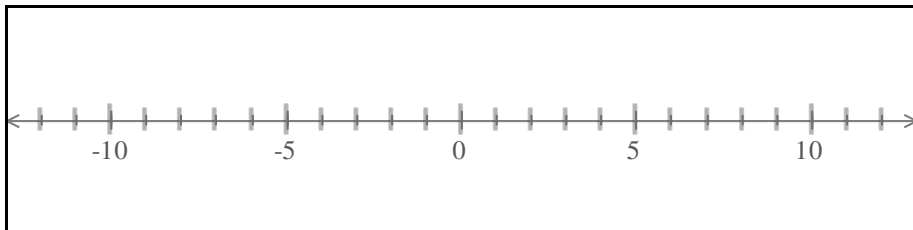
(c) What does it mean for a checkpoint to have an altitude of 0 feet?

- It is above sea level.
- It is at sea level.
- It is below sea level.

12. Plot  $-8$ ,  $2$ , and  $-4$  on the number line.



13. On the number line below, plot  $-7$  and the opposite of  $-7$ .



14. Name the quadrant or axis where each point lies.

$(-4, 1)$ : - Quadrant I - Quadrant II - Quadrant III - Quadrant IV - x-axis - y-axis	$(-4, -6)$ : - Quadrant I - Quadrant II - Quadrant III - Quadrant IV - x-axis - y-axis
$(0, 7)$ : - Quadrant I - Quadrant II - Quadrant III - Quadrant IV - x-axis - y-axis	$(5, -4)$ : - Quadrant I - Quadrant II - Quadrant III - Quadrant IV - x-axis - y-axis

15. Name the quadrant or axis where each point lies.

Point A	Point B
The $x$ -coordinate is zero and the $y$ -coordinate is negative.	The $x$ -coordinate is negative and the $y$ -coordinate is negative.
Location: - Quadrant I- Quadrant II- Quadrant III - Quadrant IV- $x$ -axis- $y$ -axis	Location: - Quadrant I- Quadrant II- Quadrant III - Quadrant IV- $x$ -axis- $y$ -axis

16. Give the coordinates of the point obtained from each reflection.

(a) Reflect the point  $(-5, -8)$  across the  $y$ -axis: ( , )

(b) Reflect the point  $(-5, -8)$  across the  $x$ -axis: ( , )

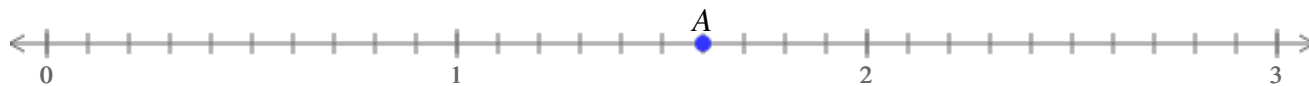
17. What is the location of  $E$  on the decimal number line below?

Write your answer as a decimal.

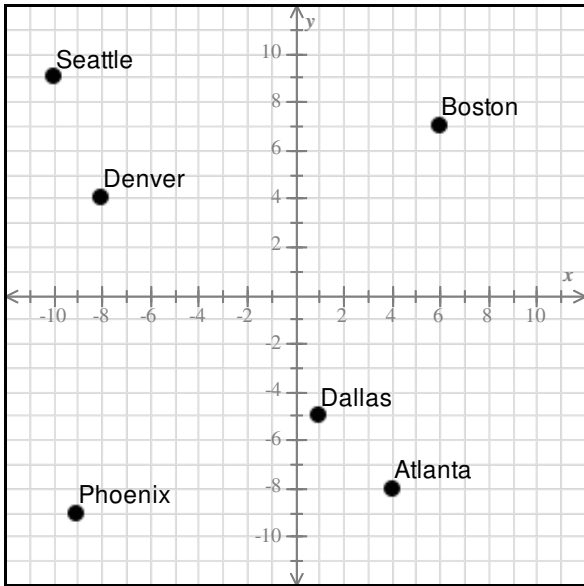


18. What is the location of  $A$  on the decimal number line below?

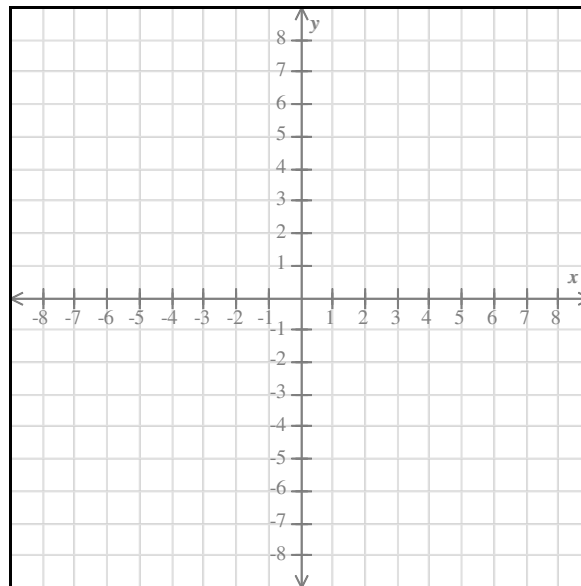
Write your answer as a decimal.



19. Give the location of Atlanta as an ordered pair  $(x, y)$ .



20. Using the pencil, plot the point  $(3, -5)$ .



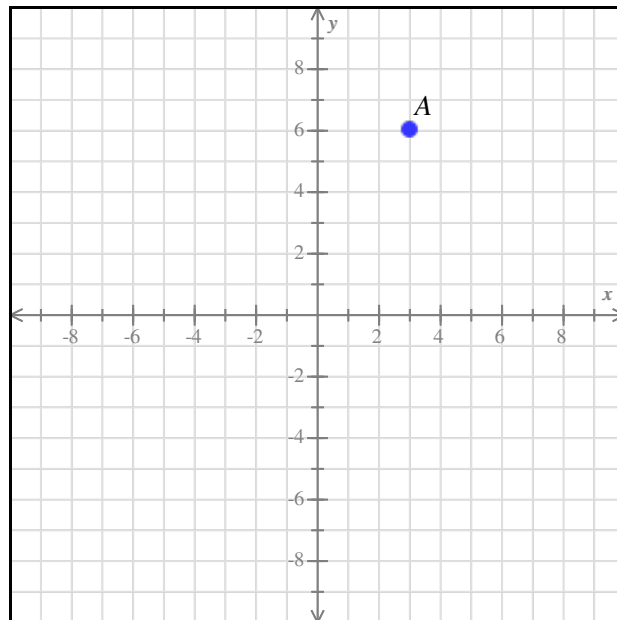
21. The point  $A$  is shown below.

Reflect  $A$  across the  $y$ -axis.

Then reflect the result across the  $x$ -axis.

Plot the final point.

**Important:** Only plot the final point in your answer.



22. Give the position of  $B$  on this number line.



Write a fraction for your answer.

23. Find the position of  $C$  on this number line.



Write a fraction or mixed number for your answer.

24. Use  $<$ ,  $>$ , or  $=$  to compare the following numbers.

$$-1 \square -10$$

$$-6 \square -8$$

$$7 \square -12$$

25. Kaitlin is riding in a bike race that goes through a valley and a nearby mountain range.

The table gives the altitudes (in feet above sea level) for the five checkpoints in the race.

Use the table to answer the questions.

Checkpoint	Altitude (feet above sea level)
1	721
2	1471
3	-203
4	3117
5	-42

(a) Compare the altitudes of Checkpoint 3 and Checkpoint 5 using  $<$ ,  $>$ , or  $=$ .

$$-203 \_ -42$$

What is the meaning of the inequality above?

- Checkpoint 3 is higher than Checkpoint 5.
- Checkpoint 3 is lower than Checkpoint 5.

(b) Compare the altitudes of Checkpoint 1 and Checkpoint 4 using  $<$ ,  $>$ , or  $=$ .

$$721 \_ 3117$$

What is the meaning of the inequality above?

- Checkpoint 1 is higher than Checkpoint 4.
- Checkpoint 1 is lower than Checkpoint 4.



26. Evaluate the following.

$$|15| = \square$$

$$|-12| = \square$$

27. Find all numbers whose absolute value is 2.

28. The table below gives the monthly increases in users (in thousands) over five months for a social networking company.

Use the table to answer the questions.

Month	Increase in users (in thousands)
August	-121
September	-301
October	-394
November	245
December	33

(a) Which month had the biggest change in the number of users?

- August
- September
- October
- November
- December

(b) Which month(s) had a gain of more than 75,000 users?

- August
- September
- October
- November
- December

29. The table gives a small company's profits (in thousands of dollars) over five months.

Use the table to answer the questions.

Month	Profit (thousands of dollars)
January	0
February	-81
March	293
April	-343
May	155

(a) In which month did the company lose the most money?

- January
- February
- March
- April
- May

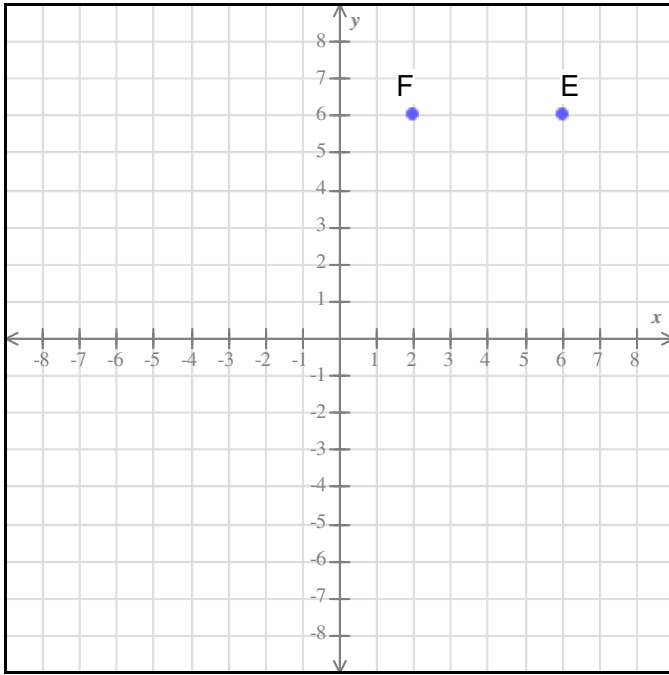
(b) In which month did the company make the most money?

- January
- February
- March
- April
- May

(c) What did it mean for the company to have a negative profit?

- It neither made nor lost money that month.
- It made money that month.
- It lost money that month.

30. Find the distance between point  $E$  and point  $F$ .



Distance: \_\_\_\_\_

31. Find the distance between the points  $(6, 4)$  and  $(-3, 4)$ .

Distance: \_\_\_\_\_

32. Write the following ratio using two other notations.

2 : 1

Use only the numbers above (not any others).

Notation one: \_\_\_\_\_

Notation two: \_\_\_\_\_

33. There are 9 boys and 5 girls in a class.

(a) What is the ratio of girls to all students in the class?

(b) What is the ratio of all students in the class to boys?

34. The ratio of boys to girls in a school is 5 : 4.

Check all statements that must be true based on the statement above.

If none of the statements is true, check "None of the above".

<input type="checkbox"/> For every 4 boys in the school, there are 5 girls.
<input type="checkbox"/> For every 5 boys in the school, there are 4 girls.
<input type="checkbox"/> For every 5 girls in the school, there are 4 boys.
<input type="checkbox"/> There are exactly 5 boys and exactly 4 girls in the school.
<input type="checkbox"/> None of the above

35. In 7 days, a group of workers can plant 56 acres.

What is their rate in acres per day?

36. Deon makes \$26.40 from selling 52.8 ounces of lemonade.

Find the unit price in dollars per ounce.

If necessary, round your answer to the nearest cent.

37. Linda is building a fence around her garden. For every 4 feet of fencing, the cost is \$28.

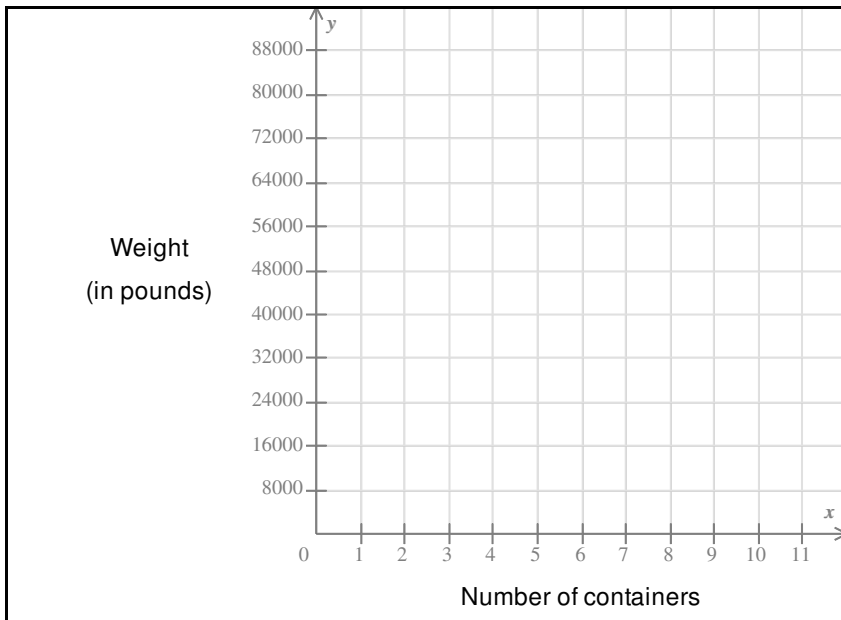
Complete the table below showing the length of the fence and the cost.

<b>Length of fencing (feet)</b>		4	7		10
<b>Cost (\$)</b>	7	28		63	

38. A boat is carrying containers that weigh 4000 pounds each.

Use this information to fill in the table. Then plot the ordered pairs given by the table.

Number of containers	Weight (in pounds)
2	
6	
8	



39. Water comes out of a pipe at a rate of 12 gallons per minute.  
How many gallons have come out after 3 minutes?

40. It costs \$3.24 for a pack of 12 pencils.  
Find the unit price in dollars per pencil.  
If necessary, round your answer to the nearest cent.

41. Use a calculator to find 95% of 67. Do not round your answer.

**42.** Answer the following questions.

(a) What is 25% of 68 ? \_\_\_\_\_

(b) 12 is 15% of what number? \_\_\_\_\_

**43.** A book sold 38,100 copies in its first month of release. Suppose this represents 7.8% of the number of copies sold to date. How many copies have been sold to date?

Round your answer to the nearest whole number.

**44.** Rewrite  $7 \times 7 \times 7 \times 7$  using an exponent.

**45.** Evaluate.

$$(9 - 3)^2 \div 9$$

**46.** Translate the phrase into an algebraic expression.

*5 less than  $x$*

- 47.** Determine whether the given terms are like terms.  
If so, combine the like terms and be sure to enter the appropriate unit.

5 apples, 2 apples <input type="radio"/> Like terms 5 apples $-$ 2 apples = _____ <input type="radio"/> Not like terms
3 birds, 7 years <input type="radio"/> Like terms 3 birds $+$ 7 years = _____ <input type="radio"/> Not like terms
2 grams, 4 grams <input type="radio"/> Like terms 2 grams $+$ 4 grams = _____ <input type="radio"/> Not like terms

- 48.** Use the equation below to find  $v$ , if  $u = 23$ ,  $a = 8$ , and  $t = 4$ .

$$v = u + at$$

- 49.** Use the distributive property to remove the parentheses.

$$(x - 12)6$$

50. For each expression, select *all* equivalent expressions from the list.

(a)  $11x - 6x + 8x$

$5x + 8x$

$13 + x$

$8x - 5x$

$13x$

(b)  $6(1 + 5y)$

$6 + 5y$

$6 \cdot 1 + 6 \cdot 5y$

$6 + 30y$

$6 + 1 \cdot 6 + 5y$



# 01 Midterm Exam -- Study Guide #1 Answers for class Math 6

1. 6

2.  $\frac{27}{35}$

3. 1209

4.

Quotient: 164

Remainder: 35

5. 22.65

6.

$$0.9 \times 0.03 = 0.027$$

$$0.8 \times 0.7 = 0.56$$

7. 19.85

8.

(a)  $\text{GCF} = 7$

(b)  $63 - 35 = 7 \times (9 - 5)$

9. 6

10.

(a) The temperature was 60 degrees above 0 (in Fahrenheit) today.

Write a signed number to represent this temperature.

60

(b) Chau withdrew 80 dollars from his checking account.

Write a signed number to represent this change in his account.

-80

11.

(a) Which checkpoint is the farthest above sea level?

- Checkpoint 1
- Checkpoint 2
- Checkpoint 3
- Checkpoint 4
- Checkpoint 5

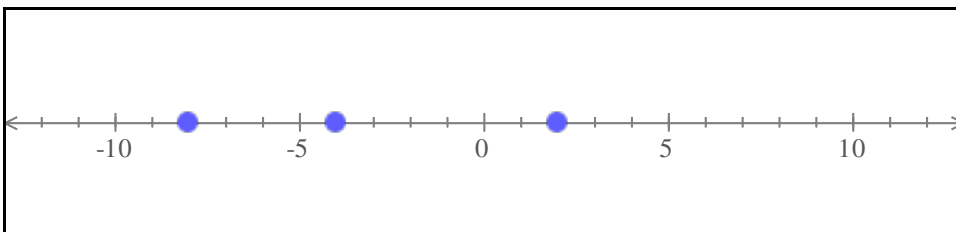
(b) Which checkpoint is the farthest below sea level?

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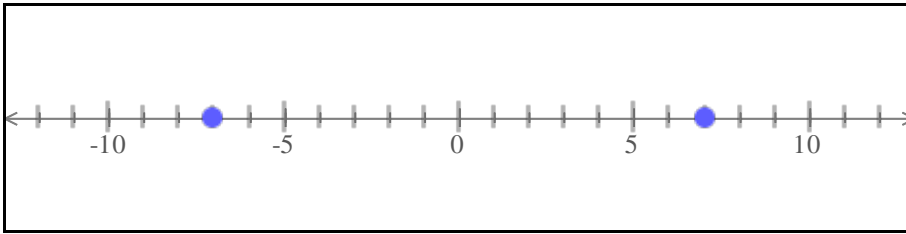
(c) What does it mean for a checkpoint to have an altitude of 0 feet?

- It is above sea level.
- It is at sea level.
- It is below sea level.

12.



13.



14.

$(-4, 1)$ : - <b>Quadrant II</b>	$(-4, -6)$ : - <b>Quadrant III</b>
$(0, 7)$ : - <b>y-axis</b>	$(5, -4)$ : - <b>Quadrant IV</b>

15.

Point A	Point B
The $x$ -coordinate is zero and the $y$ -coordinate is negative. Location: <b>y-axis</b>	The $x$ -coordinate is negative and the $y$ -coordinate is negative. Location: <b>Quadrant III</b>

16.

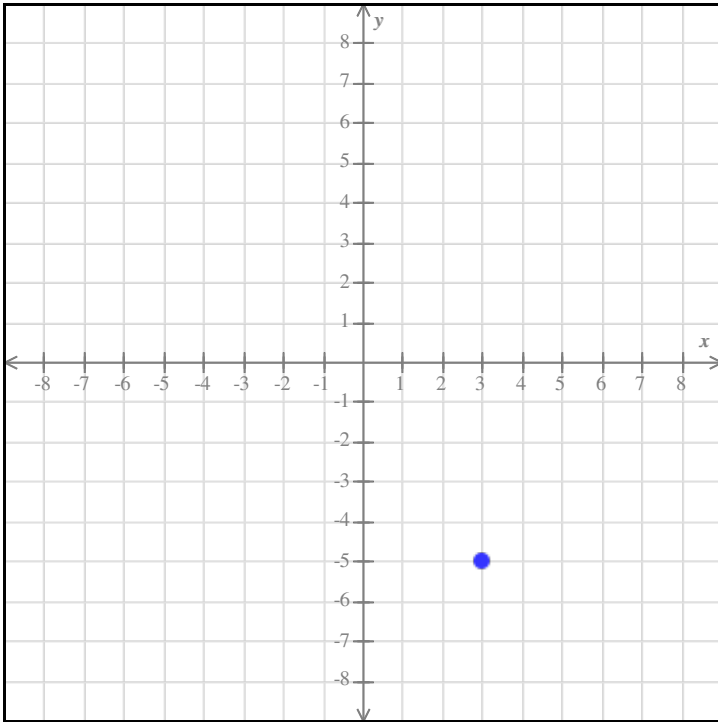
- (a) Reflect the point  $(-5, -8)$  across the  $y$ -axis:  $(5, -8)$   
(b) Reflect the point  $(-5, -8)$  across the  $x$ -axis:  $(-5, 8)$

17. 6.62

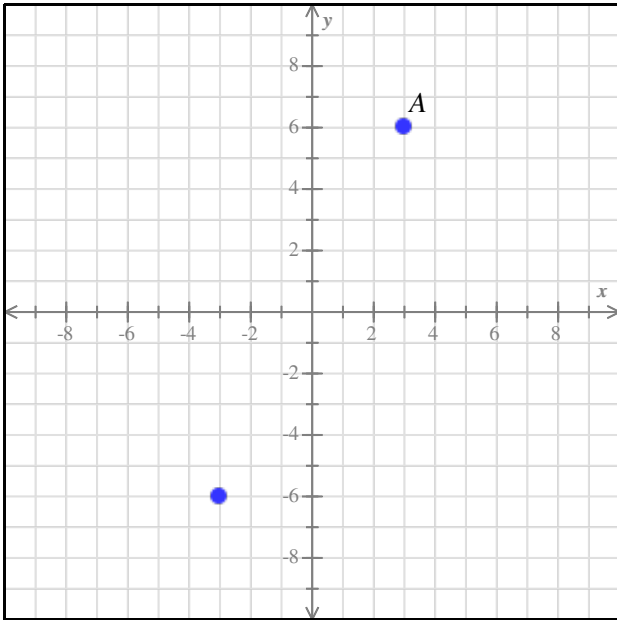
18. 1.6

19.  $(x, y) = (4, -8)$

20.



21.



22.  $\frac{4}{5}$

23.  $2\frac{5}{7}$

24.

$$-1 > -10$$

$$-6 > -8$$

$$7 > -12$$

25.

(a) Compare the altitudes of Checkpoint 3 and Checkpoint 5 using  $<$  ,  $>$  , or  $=$  .

$$-203 < -42$$

What is the meaning of the inequality above?

Checkpoint 3 is higher than Checkpoint 5.

Checkpoint 3 is lower than Checkpoint 5.

(b) Compare the altitudes of Checkpoint 1 and Checkpoint 4 using  $<$  ,  $>$  , or  $=$  .

$$721 < 3117$$

What is the meaning of the inequality above?

Checkpoint 1 is higher than Checkpoint 4.

Checkpoint 1 is lower than Checkpoint 4.

26.

$$|15| = 15$$

$$|-12| = 12$$

27.  $2, -2$

28.

(a) Which month had the biggest change in the number of users?

- August
- September
- October
- November
- December

(b) Which month(s) had a gain of more than 75,000 users?

- August
- September
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- November
- December

29.

(a) In which month did the company lose the most money?

- January
- February
- March
- April
- May

(b) In which month did the company make the most money?

- January
- February
- March
- April
- May

(c) What did it mean for the company to have a negative profit?

- It neither made nor lost money that month.
- It made money that month.
- It lost money that month.

30. Distance: 4

31. Distance: 9

32.

Notation one:  $\frac{2}{1}$

Notation two: 2 to 1

33.

(a) 5 : 14

(b) 14 : 9

34.

<input type="checkbox"/> For every 4 boys in the school, there are 5 girls.
<input checked="" type="checkbox"/> For every 5 boys in the school, there are 4 girls.
<input type="checkbox"/> For every 5 girls in the school, there are 4 boys.
<input type="checkbox"/> There are exactly 5 boys and exactly 4 girls in the school.
<input type="checkbox"/> None of the above

35. 8 acres per day

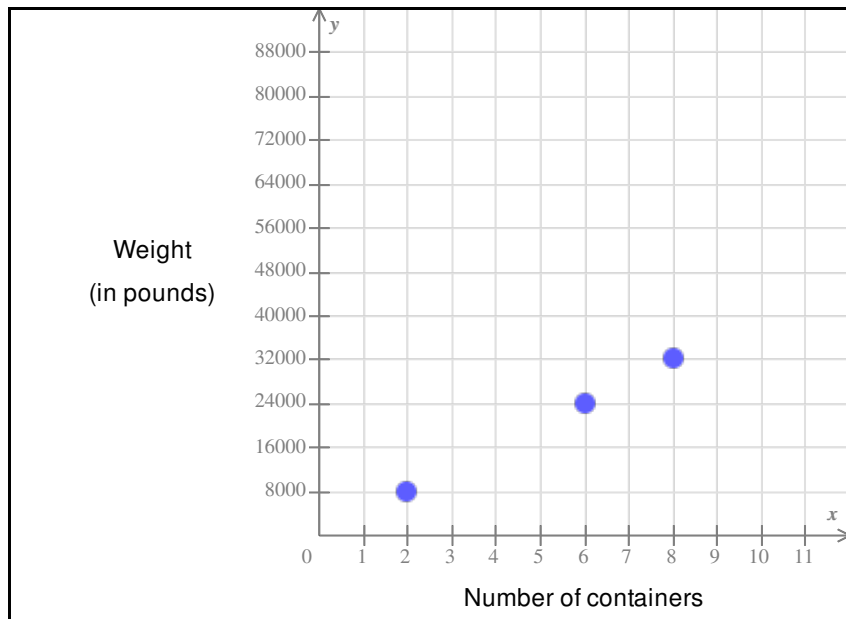
36. \$0.50

37.

Length of fencing (feet)	1	4	7	9	10
Cost (\$)	7	28	49	63	70

38.

Number of containers	Weight (in pounds)
2	8000
6	24,000
8	32,000



39. 36 gallons

40. \$0.27

41. 63.65

42.

(a) What is 25% of 68 ?            17

(b) 12 is 15% of what number?   80

43. 488,462 copies



44.  $7 \times 7 \times 7 \times 7 = 7^4$

45. 4

46.  $x - 5$

47.

5 apples, 2 apples <input checked="" type="radio"/> Like terms $5 \text{ apples} - 2 \text{ apples} = 3 \text{ apples}$ <input type="radio"/> Not like terms
3 birds, 7 years <input type="radio"/> Like terms $3 \text{ birds} + 7 \text{ years} = \underline{\hspace{2cm}}$ <input checked="" type="radio"/> Not like terms
2 grams, 4 grams <input checked="" type="radio"/> Like terms $2 \text{ grams} + 4 \text{ grams} = 6 \text{ grams}$ <input type="radio"/> Not like terms

48.  $v = 55$

49.  $6x - 72$

50. (a)  $11x - 6x + 8x$

$5x + 8x$

$13 + x$

$8x - 5x$

$13x$

(b)  $6(1 + 5y)$

$6 + 5y$

$6 \cdot 1 + 6 \cdot 5y$

$6 + 30y$

$6 + 1 \cdot 6 + 5y$