

Keystone Review  
Chapters 1-4

Chapter 1:

Evaluate the expression:

1)  $k + 9$  when  $k = 7$      16  
 $7 + 9 =$

2)  $3.5 + t$  when  $t = 0.9$   
 $4.4$

3)  $\frac{m}{5}$  when  $m = 9.5$   
 $1.9$

4)  $x^3$  when  $x = \frac{2}{3}$   
 $\frac{8}{27}$

5)  $25 - 7 + 8$   
 $26$

6)  $8^2 \div 4 + 12$   
 $28$

7)  $\frac{3^3 - 7}{2}$   
 $10$

8)  $3 + 4(3 + 24)$   
 $111$

9) Translate into an expression: three fourths of a number  $m$ .      $\frac{3}{4}m$

10) Translate into an expression: the difference of a number  $y$  and 3.      $y - 3$

11) Translate into an expression: The quotient of a number  $x$  and 7.      $x \div 7$  or  $\frac{x}{7}$

12) Translate into an expression: 6 more than 3 times a number  $n$ .      $6 + 3n$

13) Write an expression for the situation: Number of minutes left in a 45 minute class after  $m$  minutes have gone by.

$45 - m$

14) Write an expression for the situation: Number of meters in  $c$  centimeters      $\frac{c}{100}$

15) Write an equation or inequality: The product of 12 and the difference of a number  $r$  and 4 is 72.

$12(r - 4) = 72$

16) Write an equation or inequality: The difference of a number  $q$  and 18 is greater than 10 and less than 15.

$15 > q - 18 > 10$

Chapter 2:

Graph the numbers on a number line and tell which is greater:

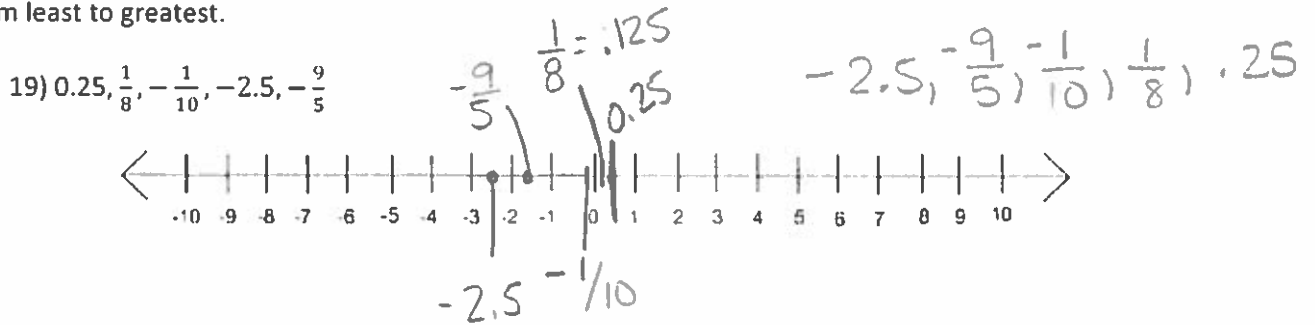
17) 0 and -4

18) -5 and -3



Keystone Review  
Chapters 1-4

Tell whether each number in the list is a whole number, integer, or rational number. List in order from least to greatest.



Find the sum:

20)  $3\frac{2}{3} + (-5\frac{3}{8})$

$$\frac{11}{3} - \frac{43}{8} = \frac{88}{24} - \frac{129}{24} = -\frac{41}{24} = -1\frac{17}{24}$$

21)  $-25 + (-36)$

$$= -61$$

22)  $-75 + 58$

$$= -17$$

Find the difference:

23)  $-17 - 20$

$$= -37$$

24)  $16 - (-50)$

$$= 66$$

25)  $-12.8 - (-5.6)$

$$= -7.2$$

26) Evaluate the expression when  $x = 1.5$  and  $y = -4$ :  $-y - (-4)$

$$+4 + (-14) = 8$$

27) Evaluate the expression when  $x = 1.5$  and  $y = -4$ :  $x - (10 - y)$

$$1.5 - (10 + 4) = -12.5$$

Find the product:

28)  $\frac{2}{3}(-36)$

$$= -24$$

29)  $-4.1(-3.5)$

$$= 14.35$$

30)  $1.1(-0.5)(-4)$

$$= 2.2$$

Use the distributive property to write an equivalent expression.

31)  $8(x + 4)$

$$= 8x + 32$$

32)  $\frac{7}{12}(24r + 12)$

$$= 14r + 7$$

33)  $-3(k - 14)$

$$= -3k + 42$$

Find the quotient:

34)  $\frac{5}{9} \div (-5)$

$$\frac{5}{9} \cdot \frac{1}{-5} = -\frac{1}{9}$$

35)  $-\frac{5}{6} \div -\frac{6}{5}$

$$-\frac{5}{6} \cdot \frac{-5}{6} = \frac{25}{36}$$

36)  $\frac{-7}{8} \div -4$

$$-\frac{7}{8} \cdot \frac{1}{-4} = \frac{7}{32}$$

Keystone Review  
Chapters 1-4

Evaluate the expression

37)  $-\sqrt{36}$   $-6$

38)  $\pm\sqrt{144}$   
 $\pm 12$

39)  $\sqrt{6400}$   
 $80$

Approximate the square root to the nearest integer.

40)  $\sqrt{135}$   $< 12$   $> 11$   $-\sqrt{56}$   $> 8$   
 $-14$   $-9$   $-7$   $-8$

Chapter 3:

Solve the equation. Check your solution

42)  $x + 4 = 20$

$x = 16$

43)  $7h = 63$

$h = 9$

44)  $\frac{y}{-3} = 8$

$y = -24$

45)  $4x + 3 = 27$

$4x = 24$   
 $x = 6$

46)  $50 = 7y - 6$

$56 = 7y$   
 $8 = y$

47)  $12w - 5 - 3w = 40$

$9w - 5 = 40$   
 $9w = 45$   
 $w = 5$

49)  $5x - 3(x - 5) = 13$

$5x - 3x + 15 = 13$   
 $2x + 15 = 13$   
 $2x = -2$   $x = -1$

50)  $10 - 2x = 3x - 20$

$10 = 5x - 20$   
 $30 = 5x$   
 $6 = x$

51)  $\frac{3}{4}(2y - 8) = 6$

$\frac{3}{2}y - 6 = 6$   
 $\frac{3}{2}y = 12$   
 $y = 8$

52)  $8x - 4 = 3x + 6$

$5x = 10$   
 $x = 2$

53)  $9 + 4y = 2(3 - y)$

$9 + 4y = 6 - 2y$   
 $3 = -6y$   
 $-\frac{1}{2} = y$

54)  $\frac{7x}{x} = \frac{14}{16}$

$x = 8$

Write the sentence as a proportion. Then solve the proportion.

55) 5 is to 7 as 15 is to x.

$\frac{5}{7} = \frac{15}{x}$   
 $x = 21$

56) 6 is to 18 as y is to 3.

$\frac{6}{18} = \frac{y}{3}$   
 $y = 1$

Keystone Review  
Chapters 1-4

Solve proportion and check your solution.

57)  $\frac{12}{x} = \frac{6}{7}$

*x = 14*

58)  $\frac{3b}{5b-7} = \frac{8}{11}$

*300 4.06 · 110  
- 70 = -56  
b = 8*

59)  $\frac{4.8-2w}{8} = \frac{0.4+w}{10}$

*40% · 10 = 2.4 + 8(10)  
45.6 (10)  
1.0 (10)*

60) What percent of 96 is 12?

*12  
96*

*12.6%*

61) What number is 35% of 18?

*35  
18*

*x = 6.3*

62) 14 is 40% of what number?

*14 40  
7 10*

*35*

63) What percent of 125 is 30?

*30 125*

*24%*

Solve the equation for x.

64)  $ax - b = c$

*10 10  
10 10  
10 10  
10 10*

65)  $a(b - x) = c$

*10 10  
10 10  
10 10  
10 10*

Write the equation so that y is a function of x.

66)  $5x + y = 10$

*y = -5x + 10*

67)  $7x + 3y = 6 - 5x$

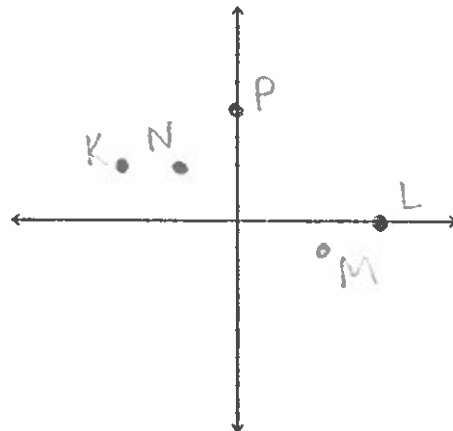
*3y = 6 - 12x  
2 = -4x*

Chapter 4:

68) Plot the point in a coordinate plane. Describe the location of the point (which quadrant is it in?)

K (-4, -2) L (5, 0) M (3, -1) N (-2, 2) P (0, 4)

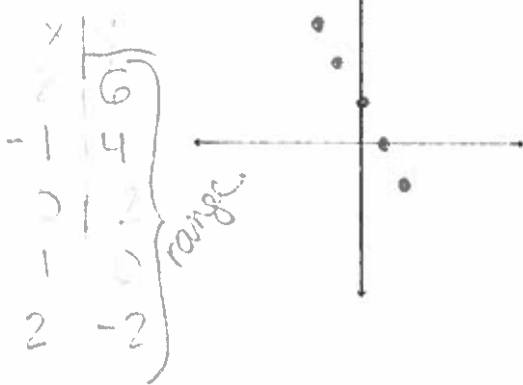
*Q2 x < 0 y < 0 Q2 y > 0*



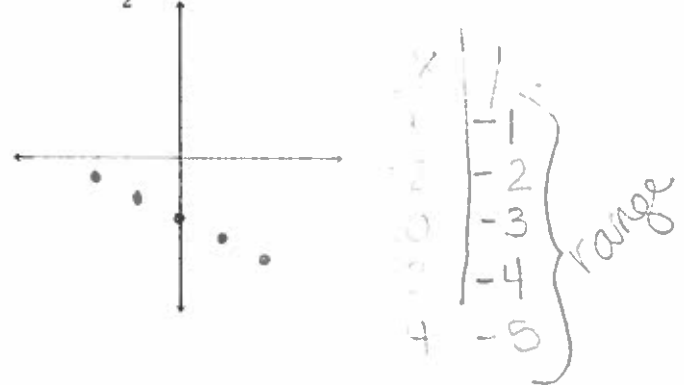
Keystone Review  
Chapters 1-4

Graph the function with the given domain. Then identify the range of the function.

69)  $y = -2x + 2$ ; domain:  $-2, -1, 0, 1, 2$

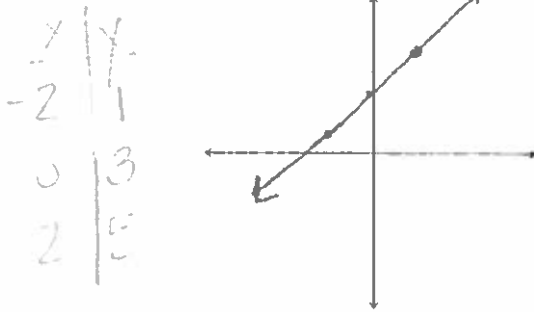


70)  $y = -\frac{1}{2}x - 3$ ; domain:  $-4, -2, 0, 2, 4$

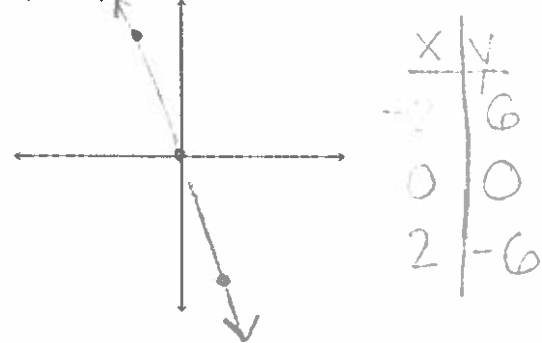


Graph the equations.

71)  $y - x = 3$



72)  $3x + y = 0$

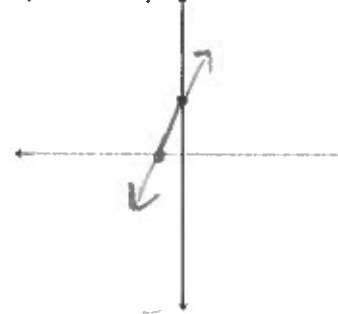


Use x and y intercepts to graph:

73)  $2x - y = 12$



74)  $-4x + 1.5y = 4$



$x$ -int:  $5(0) = 4 \Rightarrow x = -1$   
 $y$ -int:  $-4x = 4 \Rightarrow x = -1$   
 $-4(-1) + 1.5y = 4$   
 $4 + 1.5y = 4$   
 $1.5y = 0$   
 $y = 0$

Find the slope of the line that passes through the points.

75)  $(4, 2)$  and  $(6, 8)$

$m = \frac{8-2}{6-4} = \frac{6}{2} = 3$

76)  $(-2, 5)$  and  $(-2, 10)$

$m = \frac{10-5}{-2-(-2)} = \frac{5}{0}$  (undefined)