

Sections: 1-3 to 1-5, 2-1 to 2-3, 2-5, and 7-6

1. Write the equation of the line that passes through the two points given below. Give your answer in Slope-Intercept form. Points:  $(6, -1)$  &  $(-9, -11)$

Solve for the variable indicated. State restrictions on the the variables.

2.  $Q(M - Y) + K = R$  Solve for M

3.  $\frac{CH - A}{W} + E = G$  Solve for H

4.  $XJ - TB = CQ + AB$  Solve for B

Solve each inequality.

5.  $9 - 3y + 6 + y < 21$

6.  $6(R - 5) + 40 \geq 4R - 9 + 2R - 1$

7.  $-4x + 13 + 6x \leq 2(x - 5) + 8$

Sate the solution to eac compound inequality. Give your answer in the simplest form possible.

8.  $x > 12$  OR  $x \geq 10$

9.  $y < 3$  AND  $y > 6$

10.  $m \geq -1$  AND  $m < 5$

11.  $H \leq 2$  AND  $H \leq 5$

12.  $c \geq 4$  OR  $c < 8$

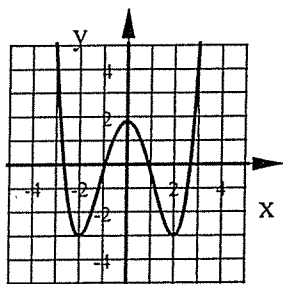
13.  $M < 0$  OR  $M \geq 2$

For 14 to 17, does each represent a function?

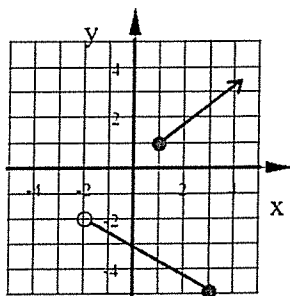
14.  $(4, 3), (3, -6), (8, 2), (4, 1)$

15.  $(-1, 5), (2, 5), (3, 9), (-7, 0)$

16.



17.



18. State the Domain and Range of the relation in Problem 14.

19. State the Domain and Range of the relation in Problem 17.

20. Write the equation of the line that passes through each pair of points in the form specified, if any.

a) Both Point-Slope and Slope-Intercept Form  $(2, 17)$  &  $(-1, 5)$

b)  $(3, -5)$  &  $(3, 7)$

c)  $(-2, -4)$  &  $(5, -4)$

21. Use this given line:  $y = 4x - 9$

a) Write the equation of a line that is parallel to this line and passes through the point  $(-2, 3)$

b) Write the equation of a line that is perpendicular to this line and passes through the point  $(8, 1)$

Solve each.

22.  $|4x - 5| + 1 = 19$

23.  $|x + 7| > 20$

24.  $|2x - 7| \leq 11$

25.  $|x + 5| = -2x + 1$

Use these functions for the 26-31:

$f(x) = x - 3$

$g(x) = 4x + 7$

$h(x) = \frac{2x - 1}{x + 6}$

$k(x) = x^2 - 2x$

26. Find  $g(h(2))$

27. Find  $f(k(-5))$

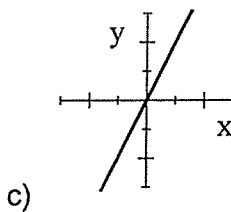
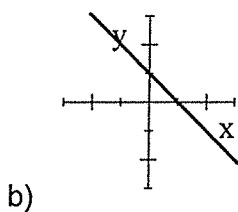
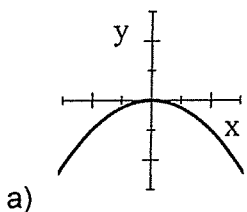
28. Find  $k(h(7))$

29. Find  $k(f(x))$ . Simplify as much as possible.

30. Find  $h(g(x))$ . Simplify as much as possible.

31. Find  $g(h(x))$ . Simplify as much as possible.

32. Does each graph represent Direct Variation?



33. Is each table below an example of direct variation?

If yes, state the variation constant and write a direct variation equation.

a)

X	Y
-6	7.5
4	-5
8	-10
14	-17.5

b)

X	Y
-3	-7.2
5	12
8	19.2
18	7.5

c)

X	Y
2	15
4	20
6	25
8	30

34. This table demonstrates a Direct Variation relationship. Find the values of X and Y.

X	Y
-5	-13.5
2	5.4
21	56.7

a) Find the value of  $x$  if  $y = 35.1$

b) Find the value of  $y$  if  $x = 33$

35. The amount of money you spend on gas varies directly with the number of gallons you purchase. You spent \$46.80 on 15 gallons of gas.

a) State the variation constant, include units.

b) Write a direct variation equation. Define your variables.

c) How much will you spend if you purchase 24.5 gallons of gas?

d) How many gallons could you purchase with \$25.74?

1.  $y = \frac{2}{3}x - 5$
2.  $\frac{R-K}{Q} + Y$  OR  $\frac{R-K+QY}{Q}$   $Q \neq 0$
3.  $\frac{W(G-E)+A}{C}$   $C \neq 0, W \neq 0$
4.  $\frac{XJ-CQ}{A+T}$  OR  $\frac{CQ-XJ}{-T-A}$   $A+T \neq 0$  or  $-T-A \neq 0$  or  $A \neq -T$
5.  $y > -3$
6. All Real Numbers
7. No Solution
8.  $x \geq 10$
9. No Sol
10.  $-1 \leq m < 5$
11.  $H \leq 2$
12. All real numbers
13.  $M < 0$  OR  $M \geq 2$
14. No
15. Yes
16. Yes
17. No
18. D:  $\{3, 4, 8\}$  R:  $\{-6, 1, 2, 3\}$
19. D:  $x > -2$  R:  $-5 \leq y < -2, y \geq 1$
20. a) Point-Slope Form:  $y - 17 = 4(x - 2)$  or  $y - 5 = 4(x + 1)$  Slope-Intercept Form  $y = 4x + 9$   
b)  $x = 3$  c)  $y = -4$
21. a)  $y - 3 = 4(x + 2)$  or  $y = 4x + 11$  b)  $y - 1 = -\frac{1}{4}(x - 8)$  or  $y = -\frac{1}{4}x + 3$
22.  $x = -\frac{13}{4}, \frac{23}{4}$
23.  $x < -27$  or  $x > 13$
24.  $-2 \leq x \leq 9$
25.  $x = -\frac{4}{3}$
26.  $\frac{17}{2} = 8.5$
27. 32
28. -1
29.  $x^2 - 8x + 15$
30.  $\frac{8x+13}{4x+13}$
31.  $\frac{15x+38}{x+6}$
32. a) No b) No c) Yes
33. a) Yes, it is Direct Variation.  $k = -1.25$  EQ:  $y = -1.25x$  or  $\frac{y}{x} = -1.25$   
b) No, it is not Direct Variation c) No, it is not Direct Variation
34. a)  $x = 13$  b)  $y = 89.1$
35. a) \$3.12/gal b)  $y = 3.12x$  or  $\frac{y}{x} = 3.12$   $y$ =total \$ spent,  $x$ =# of gallons of gas purchased  
c) \$76.44 d) 8.25 gallons