Chapter 5

1. Is each table an example of direct variation? If yes, write a direct variation equation.

(a)

X	Y
6	10
8	15
12	20
15	25

(b)

X	Y
8	2
20	5
24	6
36	9

Yes or No?_____
If yes, write the
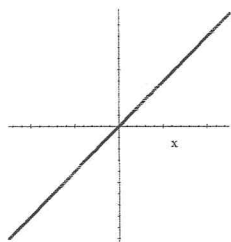direct variation equation:_____

Yes or No?_____
If yes, write the
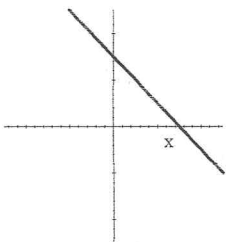direct variation equation:_____
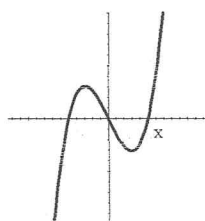
2. Is each graph an example of direct variation?
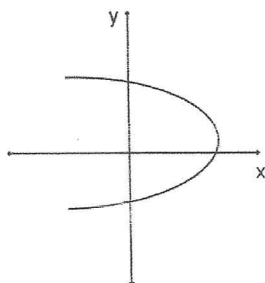
(a)   (b)   (c)

4. Is each of the below an example of a function?

X	Y
3	1
7	9
10	14
13	9

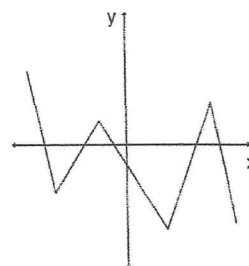(a)   b) $(3,4),(6,-8),(-1,9),(3,7)$ c)

d)

5. State the domain and range of this set of points. $(5,6),(-3,6),(4,8),(1,3)$

6. Use this function $f(w) = w^2 - 5w$. Find $f(3)$

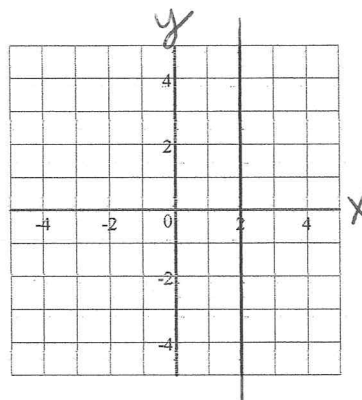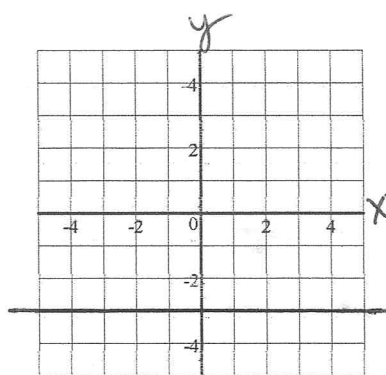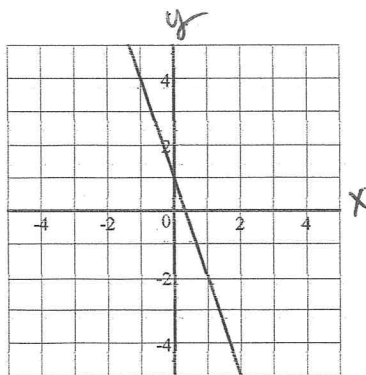You can write the equation of lines in any form if none is specified.

1. Write the equation of the line that passes through the pair of points in both Slope-Intercept Form and Point-Slope Form.

$(4,-18)$ & $(-7,37)$

2. Write the equation of the line that passes through each pair of points.

a) $(-3,8)$ & $(-3,1)$ b) $(4,5)$ & $(-2,5)$

3. Write the equation of each the line

4. Find the x and y intercepts for this line: $3x - 5y = 30$

5. Graph each equation.

(a). $y = 3x - 4$ (b). $y = -\frac{1}{2}x$ (c). $y = -1$ (d). $9x - 12y = 36$ (e). $x = -4$

6. Use this line: $y = 6x - 7$

a) Write the equation of the line that is parallel to this line and passes through the point $(5,1)$
b) Write the equation of the line that is perpendicular to this line and passes through the point $(12,10)$

7. State whether each pair of lines is parallel, perpendicular, or neither.

(a) $y = \frac{1}{6}x - 1$
$\quad y = \frac{1}{6}x + 1$

(b) $y = 2x + 5$
$\quad y = -2x + 11$

(c) $y = -\frac{4}{7}x + 3$
$\quad y = \frac{7}{4}x + 3$

(d) $y = -2x + 1$
$\quad 10x + 5y = 30$

(e) $y = 5$
$\quad x = 5$

(f) $y = 4x - 3$
$\quad 8x - 2y = 6$

8. Find the rate of change rounded to the nearest hundredth. Include units in your answer.

Days	Pounds
8	111
14	160.5
20	210
36	342

2

1. Solve this system of equations by graphing. $y = -\frac{1}{2}x + 4$ $3x - 6y = 12$

2. Witout graphing tell if each system of equations has ONE, NONE, or MANY solutions.
solutions without graphing.

a) $y = 4x - 5$

   $y = -\frac{1}{4}x + 7$

b) $y = 2x + 8$

   $6x - 3y = 12$

c) $y = \frac{2}{3}x - 4$

   $6x - 9y = 36$

3. Solve each system of equation by SUBSTITUTION. Give your answer as the coordinates of a point.

a) $y = 4x - 9$

   $y = 2x + 15$

b) $y = 3x - 4$

   $6x + 5y = 1$

4. Solve each system of equations using ELIMINATION. Give your answer as the coordinates of a point.

a. $4x + 3y = -6$ b. $5a - 16b = 87$ c $10Q + 3R = 24$ d. $11x - 7y = 106$

   $4x - 7y = -26$ $11a + 4b = -83$ $4Q + 13R = 104$ $-12x + 7y = -115$

5. a) Friday I walked 30 minutes and jogged 10 minutes and burned 330 calories. On Saturday I walked 25 minutes and jogged 40 minutes and burned 750 calories. Write and solve a system of equations using the ELIMINATION method to find out how many calories are burned per minute for both walking and jogging.

b) You start a deck building business buy spending $18,000 on a truck and tools. Each job will cost you $600 in materials and you plan to charge $2250 per job. Find the number of jobs you must complete in order to break-even.

Graph each linear inequality on the x-y plane.

6. $y \leq -\frac{1}{5}x + 4$ 7. $y > 3x$ 8. $6x - 8y \geq 24$ 9. $x > -3$ 10. $y \leq 4$

Graph each system of inequalities. Use a colored pencil or highligher to shade ONLY the solution region.

11. $y < -3x + 5$

    $y \leq 4x$

12. $x \leq 2$

    $2x + 4y > 12$