

Find the slope between the following points

1. (-6,1) and (8, 3)                      2. (-5, -1) and (3, 5)

3. Find the equation of the line through the points A(9, 4) and B(2, -1)

4. Find the equation of the line parallel to the line  $3x + 4y = 5$  through the point (1,4)

5. Find the equation of the line perpendicular to  $y = 3x - 5$  through the point (2, 1)

6. Graph the equation  $y = x^3 - x^2 - 2x + 1$ , be sure to label all intersection points

7. Given the equation  $y = 5x^2 + 1$  determine the following:

Is it symmetrical to

a) x-axis

b) y – axis

c) origin

What is the

d) x intercept

e) y – intercept

What is the end behavior?

f) as  $x \rightarrow \infty$   $f(x) \rightarrow$  \_\_\_\_\_

g) as  $x \rightarrow -\infty$   $f(x) \rightarrow$  \_\_\_\_\_

Find the midpoint and distance between the following

8. A(3,2) and B (-5,1)

9. (5,3) and (-2, -2)

10.  $(\square, 2\square)$  and  $(2\square, \square)$

11. Find the distance and midpoint between the points from question 1 and 2.
12. If the midpoint between points R and S is  $(3, 0.5)$  and point R is a point  $(-1, 2)$  where is point S?
13. A company reimburses its sales representatives \$150 per day for lodging and meals plus 30 cents per mile driven. Write a linear equation giving the daily cost  $C$  to the company in terms of  $x$ , the number miles driven.
14. An employee has two options for positions in a large corporation. One position pays \$12.50 per hours plus an additional unit rate of \$0.75 per unit produced. The other pays \$9.20 per hour plus a unit rate of \$1.30
- Find linear equations for the hourly wages  $W$  in terms of  $x$ , the number of units produced per hour for each of the options.
  - Find the solution to these two equations.
  - what does the intersection point mean?
15. A small business purchases a piece of equipment for \$875. After 5 years the equipment will be outdated and have no value
- write a linear equation giving the value  $y$  of the equipment in terms of the time  $x$ ,  $0 \leq x \leq 5$ .
  - Using your calculator graph the equation (sketch it to the right)
  - Find the value of the equipment (to the nearest penny) after
    - two years \_\_\_\_\_
    - 3 years 5 months \_\_\_\_\_
  - When will the value of the machine be half its purchase price? \_\_\_\_\_