

Precalculus Review #1 Chapter 2 page 1 _____

In each of the following problems you are given the coordinates of point P and point Q. Find PQ. Express your answer rounded to the nearest hundredth.

1. $P(4, -1)$ $Q(6, 1)$ PQ : _____

2. $P(7, 3)$ $Q(-2, 3)$ PQ : _____

In each of the following problems you are given the coordinates of point P and point Q. Find the coordinates of point M, the midpoint of segment PQ.

3. $P(-1, -6)$ $Q(5, -8)$

4. $P(3, 7)$ $Q(3, -6)$

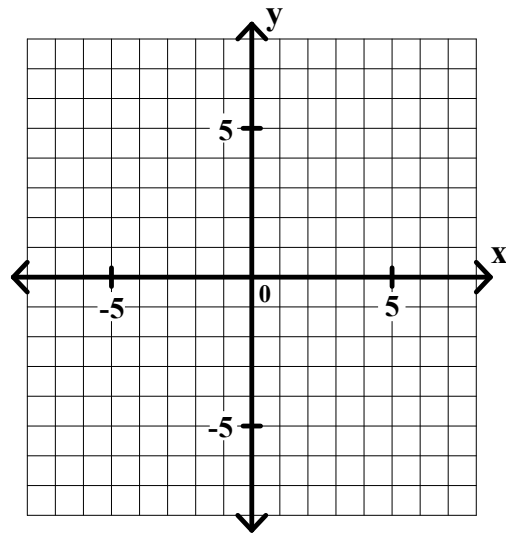
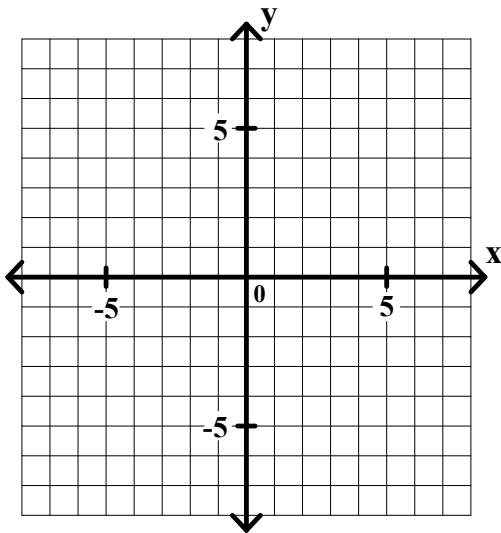
M: (_____, _____)

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Sketch a graph of each of the following equations.

5. $3x - 4y = 8$

6. $x^2 + y^2 = 25$



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Solve the following problems.

7. Find the value(s) of x so that the distance between $(x, 6)$ and $(3, -6)$ is 13.

8. Write the general form equation of the circle with a radius of 3 and center at $(0, 3)$.

Given functions f and g defined by the equations $f(x) = -2x^2$ and $g(x) = 1 - 2x$. Evaluate each of the following. Express your answers in simplest form.

9. $f(2) =$ _____

10. $g(2) =$ _____

11. $f(-3) =$ _____

12. $g(-3) =$ _____

13. $f(2x) =$ _____

14. $g(2x) =$ _____

15. $f(2k - 3) =$ _____

16. $g(2k - 3) =$ _____

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Find the equation of each line described below. If the line is oblique, then write the slope-intercept equation.

17. the line through $(0, -5)$ and $(2, 3)$

18. the line through $(2, 3)$ and $(2, 0)$

19. the line through $(3, -3)$ and $(-3, -1)$

20. the line through $(2, 3)$ and $(-1, 3)$

21. the line through $(1, 2)$ and $(3, -1)$

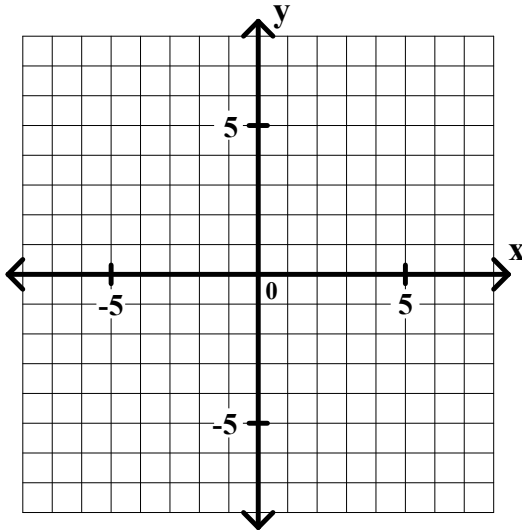
22. the line through $(6, 2)$ that is parallel to $3x - 2y = 0$

23. the line through $(6, 2)$ that is perpendicular to $3x - 2y = 0$

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In problems #24-25, you are given a function. Sketch a graph of each, and then give the domain (implied) and range.

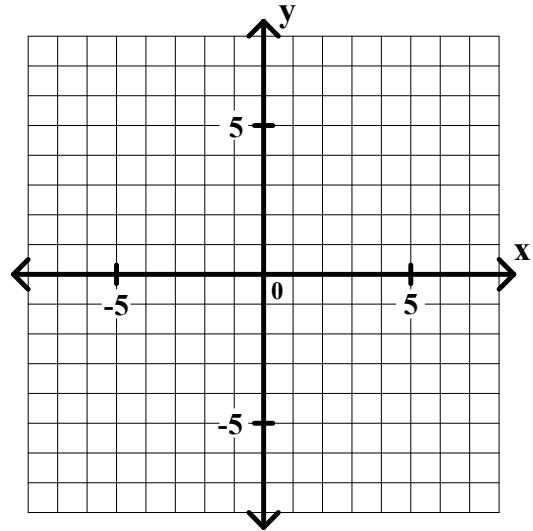
24. $f(x) = \sqrt{x + 7}$



domain of f (above) _____

range of f (above) _____

25. $g(x) = |x| - 5$



domain of g (above) _____

range of g (above) _____

Write the indicated function.

26. A rectangle's length is 3 inches less than twice its width. Let x represent the width of the rectangle, and express the perimeter of the rectangle, P , as a function of x .

27. Express the area, A , of a square as a function of its perimeter, P .

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Write the indicated function.

28. A right triangle is situated in the x - y plane such its vertices are $(0, 0)$, $(x, 0)$ and $(0, y)$, where $x > 0$ and $y > 0$. If its hypotenuse passes through the point $(3, 1)$, then express its area as a function of x .

29. Consider the rectangle shown below. Express its area as a function of x .

