

Chapter 1 Test

Solve algebraically and give exact answers.

1) $x^2 + 8x - 3 = 10$

Given the points (5, -3) and (10, -5) answer the following.

- 2) Find the distance between the given points.
- 3) Find the midpoint between the given points.
- 4) Find the equation of the line that passes through both points.
- 5) Find the equation of the function parallel to the function found in problem #4 that passes through the point (2, 3).
- 6) Find the equation of the function perpendicular to the function found in problem #4 that passes through the point (-3, 5).

Given the functions $f(x) = 3x^2$ and $g(x) = \sqrt{x - 5}$ answer the following.

7) Find $\left(\frac{f}{g}\right)(x)$.

8) Find $g[f(x)]$.

9) Find and state the domain of $f[g(x)]$.

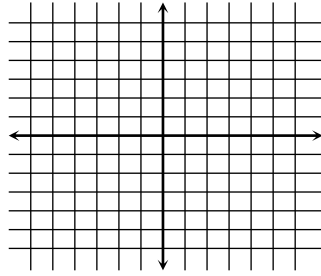
Given $f(x) = -3x^2 + 2x - 1$ and $g(x) = 3x - 2$ answer the following.

10) Find $(g \circ f)(x)$.

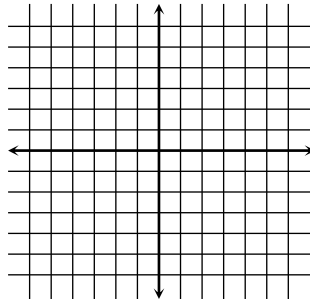
11) Find $(f \circ g)(x)$.

Find the center and the radius of the following circles and graph.

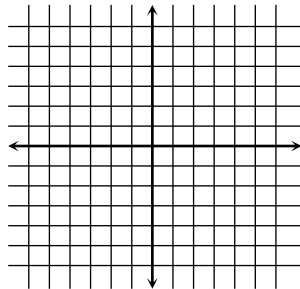
12) $x^2 + y^2 = 16$



13) $(x-2)^2 + (y+3)^2 = 4$

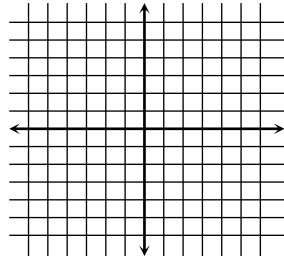


14) $x^2 + y^2 - 4x + 6y + 4 = 0$

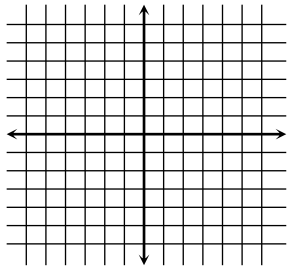


Graph the following functions using a table, vertex or inflection point. State the domain and range.

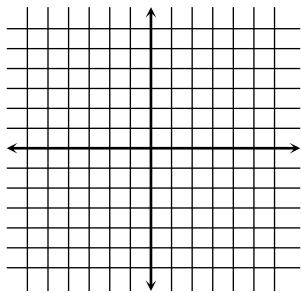
15) $f(x) = -3(x-1)^2 + 4$



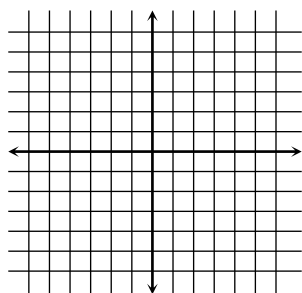
16) $f(x) = |x+2| - 3$



17) $f(x) = x^3 - 1$



18) $f(x) = \sqrt{x-2} + 3$



Determine whether the equation defines y as a function of x .

19) $y^4 = 3x^5$

20) $x^2 + y = 10x$

21) Write the following equation in general form: $\frac{5}{7}x = 3y + 8$.

Solve for x by completing the square.

22) $3x^2 - 9x - 1 = 0$

23) Find the slope of the tangent line of $f(x) = -3x^2 + 2x - 1$.

Determine whether the following functions are odd, even or neither?

24) $f(x) = 5x^2 + 3x^4$

25) $g(x) = 2x^2 + 1$

Graph the following function and state the domain and range.

26) $f(x) = \begin{cases} -2x^2 + 1, & x < 2 \\ x + 3, & x \geq 2 \end{cases}$

