Chapter 9 & 11 review

Name(s)_____

Solve the equation or inequality.

1) $|2x + 3| + 7 = 9$

2) $|8t + 5| = -8$

3) $|x - 3| = |8 - x|$

4) $\left|\frac{9x + 18}{2}\right| = 9$

5) $x \geq 4$ and $x \geq -1$

6) $x \geq 2$ or $x \geq -2$

7) $|3x + 6| \geq 2$

8) $|x + 1| - 3 < 5$

9) $|7k - 5| > -7$

10) $-5 \leq \frac{2x - 5}{2} < 6$

Solve the equation.

11) $(x + 5)^2 = 14$

12) $m^2 + m + 4 = 0$

13) $y^2 - 3y = 2$

14) $\frac{7}{x - 5} + \frac{x}{x + 5} = \frac{42}{x^2 - 25}$

15) $x^5 + 4x^4 = x + 4$

16) $(x + 5)^2 + 7(x + 5) + 10 = 0$

Solve the equation by completing the square.

17) $x^2 + 12x = -26$

18) $16a^2 + 1 = 5a$

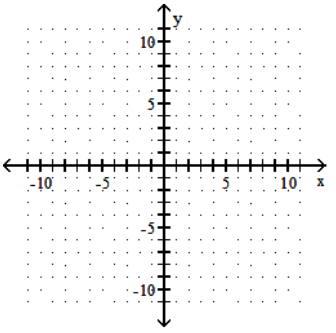
Use the discriminant to determine the number and type of solutions of the equation.

19) $x^2 - 3x + 4 = 0$

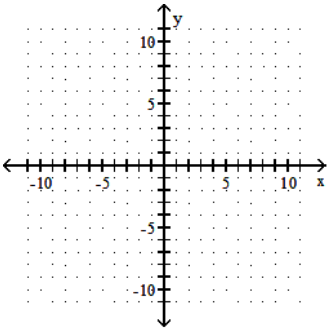
20) $x^2 - 2x + 1 = 0$

Graph the function. Find the vertex.

21) $f(x) = 5x^2$

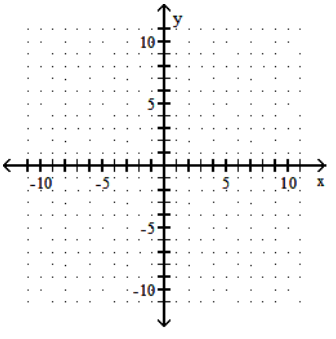


22) $G(x) = 3(x - 3)^2 - 1$



Graph the function. Find the vertex, y-intercept, and x-intercepts (if any).

23) $h(x) = x^2 - 8x + 16$



1) $-\frac{1}{2}, -\frac{5}{2}$

2) $\emptyset$

3) $\frac{11}{2}$

4) $-4, 0$

5) $[4, \infty)$

6) $[-2, \infty)$

7) $\left(-\infty, -\frac{8}{3}\right] \cup \left[-\frac{4}{3}, \infty\right)$

8) $(-9, 7)$

9) $(-\infty, \infty)$

10) $\left[-\frac{5}{2}, \frac{17}{2}\right)$

11) $-5 - \sqrt{14}, -5 + \sqrt{14}$

12) $\frac{-1 - i\sqrt{15}}{2}, \frac{-1 + i\sqrt{15}}{2}$

13) $\frac{3 + \sqrt{17}}{2}, \frac{3 - \sqrt{17}}{2}$

14) $-1 - 2\sqrt{2}, -1 + 2\sqrt{2}$

15) $-1, 1, -i, i, -4$

16) $-10, -7$

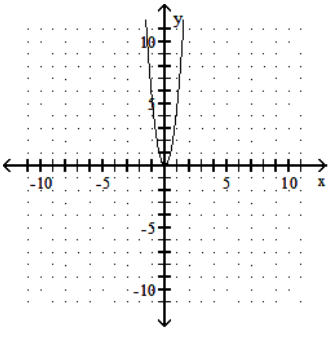
17) $-6 - \sqrt{10}, -6 + \sqrt{10}$

18) $\frac{5 - i\sqrt{39}}{32}, \frac{5 + i\sqrt{39}}{32}$

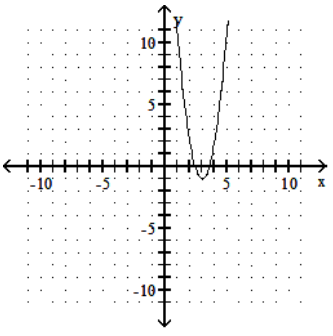
19) two complex but not real solutions

20) one real solution

21) vertex: (0, 0)



22) vertex: (3, -1)



23) vertex: (4, 0)
x-intercept: (4, 0), y-intercept: (0, 16)