

Math 230 Test 3 Review

Solve.

1) $x^2 - 3x - 10 = 0$

2) $x^2 + 9x + 14 = 0$

3) $(x - 5)^2 = 36$

4) $(x + 3)^2 + 13 = -11$

5) $x^2 + x + 7 = 0$

6) $x^2 + 8x = 12$

7) $x^4 + 5x^2 - 36 = 0$

8) $x - 3\sqrt{x} - 18 = 0$

9) $x + 13 = \frac{30}{x}$

10) Solve by **completing the square**.

$x^2 - 8x - 33 = 0$

Find a quadratic equation with integer coefficients that has the given solution set.

11) $\left\{-2, \frac{3}{4}\right\}$

12) $\left\{\frac{3}{8}, -\frac{1}{7}\right\}$

13) $\{9\}$

14) $\{5i, -5i\}$

15) The length of a rectangle is 10 inches less than its width. If the area of the rectangle is 100 square inches, find the length and width of the rectangle. (Round your answer to the nearest tenth of an inch.)

16) If Joe lives 2 miles north and 17 miles east of COS, how far from COS does he live?

17) An object is launched at a speed of 64 feet per second from a platform that is 192 feet high. (Use the function $h(t) = -16t^2 + vt + s$, where v represents the initial velocity and h represents the initial height.)

a) When will the object land on the ground?

b) When will the object be 112 feet above the ground?

18) Graph $y = x^2 - 2x - 8$.

19) Graph $y = -x^2 + 5x + 6$.

20) Graph $y = x^2 + 6x - 9$.

21) Graph $y = -x^2 + 4x - 7$.

Solve. Your solution must include a number line **and** interval notation. You must list your test points.

22) $x^2 - 7x - 30 \geq 0$

23) $x^2 + 11x + 18 < 0$

24) $\frac{x^2 - 4x - 12}{x - 3} \geq 0$