Math 80
Ch. 7 Review
Ms. Meier

Name:_____

Solve each quadratic equation:

1) $(x-17)^2 = 16$

2) $x^2 + 4x = 9$

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

4) $-5x + 9 + 2x^2 = 0$

5) A rock is thrown from the top of a building. The distance in feet, between the rock and the ground t seconds after it is thrown is given by: $d = -16t^2 - 4t + 452$. How long after the rock is thrown is it 320 feet from the ground?

Solve:

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

7) $(x+4)^2 + 5(x+4) - 14 = 0$

Sketch the graph of the function using transformations, then state the vertex and axis of symmetry.

8) $f(x) = -(x+3)^2 + 5$

9) $g(x) = (x-4)^2 - 7$

Find the vertex, y-intercept, and x-intercepts, then graph:

10) $f(x) = x^2 - 6x + 5$

Solve the quadratic inequality, then state the solution in interval notation.

11) $a^2 - 3a - 28 < 0$

12) $x^2 - 8x \geq 5$

Solve:

13) Barney and his friends traveled at a constant speed for 60 miles on one road. They then traveled 5 miles per hour faster on a second road, for 90 miles. If they drove for a total of $3\frac{1}{2}$ hours, find their speed on the second road.

14) The area of a rectangle is 108 square feet. The width is 3 feet less than the length. What are the dimensions of the rectangle?

Ch. 8 Review Answers:

1) $x = 13$, $x = 21$

2) $-2 \pm \sqrt{13}$

3) $-\dfrac{5}{3} \pm \dfrac{\sqrt{22}}{3}$

4) $\dfrac{5}{4} \pm \dfrac{\sqrt{47}i}{4}$

5) 2.75 seconds or 11/4

6) $x = 1, -1, \sqrt{3}, -\sqrt{3}$

7) $x = -11, -2$

8) Vertex (-3,5) faces down, axes of symmetry $x = -3$

9) Vertex (4, -7) faces up, axes of symmetry $x = 4$

10) Vertex (3, -4), y-intercept (0, 5) x-intercepts: (5, 0) and (1, 0) faces up

11) Solutions are in the interval: (- 4 , 7)

12) Solutions are in the interval: $(-\infty, 4 - \sqrt{21}] \cup [4 + \sqrt{21}, \infty)$

13) The second road they travel 45 mph   (40 +5)

14) 12 feet by 9 feet