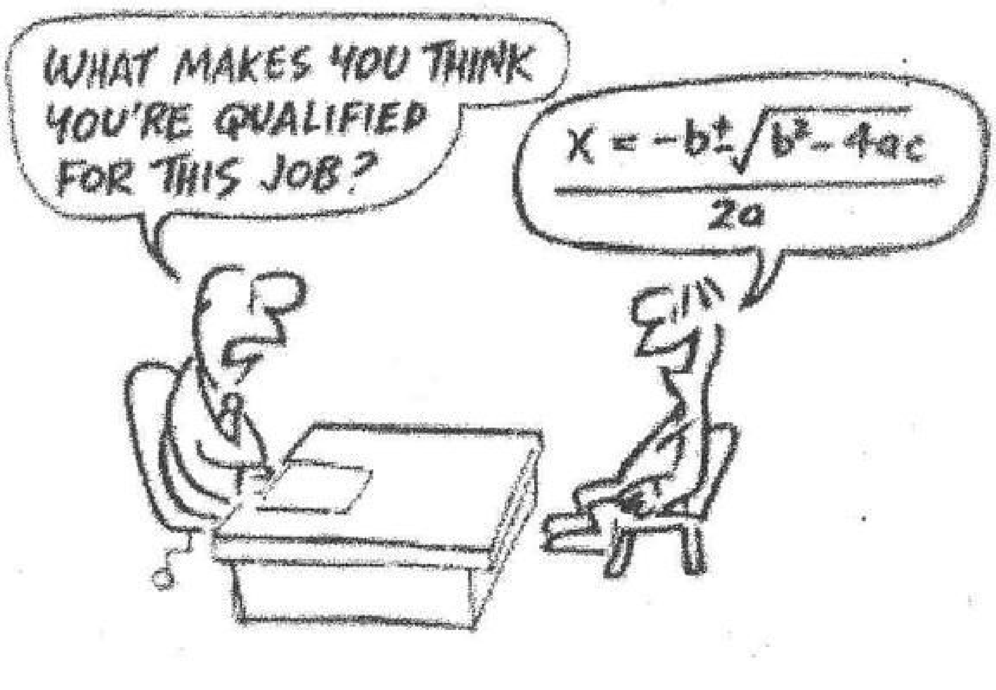
Date	Topic	Homework
August 29	• Solve linear equations • Simplify radicals	worksheet 1.1
August 30	• Solve linear equations • Simplify complex radicals	worksheet 1.2
August 31	• Solve quadratic equations with rational solutions	worksheet 1.3
September 1	• Quiz!! • Solve quadratic equations with irrational solutions	worksheet 1.4
September 4	• No School - Labor Day	
September 5	• Solve quadratic equations with complex solutions	worksheet 1.5
September 6	• Determine vertex • Applications of quadratic equations	worksheet 1.6
September 7	• Quiz!!	worksheet 1.7
September 8	• Applications of quadratic equations	worksheet 1.8
September 11	• Review for test	Quadratics Review
September 12	• Test!!	

NAME ______________________________

FOM 3

Unit 1: Quadratics



1.8 - More Applications of Quadratics

At a festival, pumpkins are launched with large catapults and air cannons. On one launch, the height of a pumpkin in feet above the ground after *t* seconds is modeled by $f(t) = -16t^2 + 100t + 12$.

1. What is the maximum height of the pumpkin?

2. After how many seconds did the pumpkin reach its maximum height?

3. When did the pumpkin reach the ground?

4. What was the height of the pumpkin after 5 seconds?

5. When was the pumpkin at a height of 100 feet?

The demand for drills depends on their price. A manufacturer determines that the number of drills he can sell at a price of p dollars is given by the formula $d = -2p^2 + 84p - 200$.

6. How many drills can the manufacturer sell if the price is $30?

7. At what price will the demand for the drills be a maximum?

8. At what price will there be demand for 610 drills?

1.1 - Solve Linear Equations

Solve for the variable.

1. $9x - 7 = -28$

2. $6 = 1 - 2n + 5$

3. $p - 4 = -9 + p$

4. $2(m + 5) = -2$

5. $144 = -12(x + 5) - 10$

6. $-12 = 3 - 2k - 3k$

7. $-3(4r - 8) = 36 - 2r$

8. $2(4h - 3) - 8 = 4$

9. $3(x - 3) = 3x - 9$

10. $8w - 4 + 6w = 7w + 8$

1.2 - Complex Radicals

Simplify each radical.

1. $\sqrt{-27}$

2. $\sqrt{-60}$

3. $-\sqrt{450}$

4. $\sqrt{-15}$

5. $-\sqrt{-200}$

6. $\sqrt{-16}$

7. $\sqrt{147}$

8. $\sqrt{-864}$

9. $\sqrt{-1920}$

Solve for x.

10. $6x - 3 + 3x = 5x + 3$

11. $0.02x + 0.04(1300 - x) = 75$

12. $-2(h - 4) = 6 - 2h + 2$

13. $-4(-4x - 3) + 2x = 5x$

1.7 - Quadratic and Vertex Formulas

Solve using the quadratic formula.

1. $3x^2 - 1 = 6x$

2. $4x^2 - 8x + 3 = 0$

3. $2x^2 + 8 = -3x$

4. $x^2 = 6x - 6$

5. $4x^2 + 11x = 3x - 10$

6. $x^2 + 6x + 14 = 8x + 4$

Determine the vertex of each. State whether it is a maximum or a minimum.

7. $y = 3x^2 + 12x - 5$

8. $y = -x^2 + 5x + 3$

9. $y = 4x^2 + 1$

1.6 - Applications of Quadratic Equations

1. A rock is thrown skyward from the top of a tall building. The distance, in feet, between the rock and the ground t seconds after the rock is thrown is given by $d = -16t^2 - 4t + 466$. How long after the rock is thrown is it 410 feet from the ground?

2. As a bird flies upward, it drops a berry. The equation $h(t) = -16t^2 - 2t + 763$ describes the height, h, of the berry in feet t seconds after it is dropped. How long does it take the berry to hit the ground?

3. An arrow shot into the air is modeled by the equation $y = 160t - 16t^2$ feet above the ground t seconds after it is released. What period of time is the arrow above 256 feet?

4. A company makes and sells swing sets. The equation $P = -0.5x^2 + 176x - 1440$ can be used to model the company's monthly net profit, P, where x is the price the company charges per swing set. What is the highest price the company could charge for each swing set if it wants to make a monthly net profit of $12,000?

1.3 - Quadratic Formula with Rational Solutions

Solve using the quadratic formula.

1. $v^2 + 2v - 8 = 0$

2. $k^2 + 5k - 6 = 0$

3. $2h^2 - 5h + 3 = 0$

4. $2a^2 - a - 13 = 2$

5. $b^2 - 4b - 14 = -2$

6. $3a^2 = 6a - 3$

7. $2r^2 + 7r = 15$

8. $10x^2 - 5 = -23x$

9. $4m^2 + 12m - 9 = 21m$

10. $x^2 = -3x + 40$

1.4 - Quadratic Formula with Irrational Solutions

Solve using the quadratic formula.

1. $2b^2 + 4b = 5$

2. $v^2 + 5v - 4 = 0$

3. $h^2 - 5h + 3 = 27$

4. $p^2 = 4p + 1$

5. $2x^2 - 13 = 8x$

6. $14m^2 + 1 = 6m^2 + 7m$

1.5 - Quadratic Formula with Complex Solutions

Solve using the quadratic formula.

1. $2x^2 - 6x + 7 = 0$

2. $c^2 + 6c + 25 = 0$

3. $h^2 = 3h + 3$

4. $x^2 - 24 = 2x$

5. $11p^2 - 12p + 10 = 4p^2$

6. $g^2 + g = -4$

7. $4x^2 + 4x - 8 = 1$

8. $5w^2 + 8w + 4 = 0$