

DO NOW:

18MAR14

- 1.) Answer the question below
- 2.) Have homework out
- 3.) Go over both 'DO NOW' & HW in your group
- 4.) Don't judge! You never know what kind of battle they are fighting.

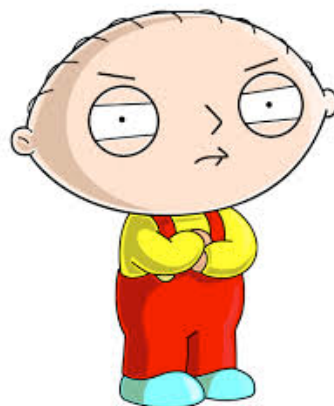
Write P in terms of R

$$\begin{array}{lcl}
 P = 3.5C - 250 & \text{and} & 1250R = 2100 - C \\
 \text{2ND } P = 3.5(2100 - 1250R) - 250 & \text{1ST} & \begin{array}{r} +C \qquad \qquad +C \\ \hline C + 1250R = 2100 \\ -1250R \quad -1250R \\ \hline C = 2100 - 1250R \end{array} \\
 P = 7350 - 4375R - 250 & & \\
 \boxed{P = 7100 - 4375R} & &
 \end{array}$$

1. Which is a perfect square trinomial?

a. $x^2 - 8x + 8$ **b.** $x^2 - 8x + 16$

c. $x^2 - 8x + 64$



2. Solve $x^2 - 4x = 8$ by completing the square. Solve the same equation by the quadratic formula. Explain the difference in the results.



3. What term must be added to $x^2 + 6x$ to create a perfect square trinomial?



4. Name the five methods for solving a quadratic equation.



Summary of Methods for Solving $ax^2 + bx + c = 0$

1.) *Graphing*

Can be used for *any* quadratic equation, but gives only approximate solutions.

2.) *Factoring*

Efficient way to solve equation *if* quadratic can be factored easily.

3.) *Using Quadratic Formula*

Can be used for *any* quadratic equation. Always gives exact solutions.

4.) *Finding Square Roots*

Efficient way to solve $ax^2 + c = 0$.

5.) *Completing the Square*

Can be used for *any* quadratic equation, but is best suited for quadratics with $a = 1$ and b an even number.

solve the equation by completing the square

$ax^2 + bx + c = 0$ when $a > 1$



$$3x^2 - 24x - 5 = 0$$

$$\frac{3x^2 - 24x}{3} = \frac{5}{3}$$

$$x^2 - 8x = \frac{5}{3}$$

$$x^2 - 8x + 16 = \frac{5}{3} + 16$$

$$\sqrt{(x-4)^2} = \sqrt{\frac{53}{3}}$$

$$x - 4 = \pm \sqrt{\frac{53}{3}}$$

$$x = 4 \pm \sqrt{\frac{53}{3}}$$

OR $x \approx 8.20$

$x \approx -0.20$

solve the equation by completing the square

$$2x^2 - 6x - 15 = 5$$

If the leading coefficient of the quadratic is not 1, you should divide both sides of the equation by this coefficient *before* completing the square.



$$2x^2 - 6x - 15 = 5$$

$$\quad \quad \quad +15 \quad +15$$

$$\frac{2x^2 - 6x}{2} = \frac{20}{2}$$

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

$$x^2 - 3x + \left(-\frac{3}{2}\right)^2 = 10 + \left(-\frac{3}{2}\right)^2$$

$$\sqrt{\left(x - \frac{3}{2}\right)^2} = \sqrt{\frac{49}{4}}$$

$$x - \frac{3}{2} = \pm \frac{7}{2}$$

$$+ \frac{3}{2} \quad + \frac{3}{2}$$

$$x = \frac{3}{2} + \frac{7}{2}$$

$$x = \frac{3}{2} + \frac{7}{2} = 5$$

$$x = \frac{3}{2} - \frac{7}{2} = -2$$