

October 24, 2011
 Aim: How do we solve quadratic equations algebraically?
 Part II
 HW #9
 Test #3 11/2/2011 based on HW #10
 Do Now Solve by factoring.

$$x^2 + 4x + 4 = 0$$

$$(x+3)(x+1) = 0$$

$$\left. \begin{array}{l} x+3=0 \\ x=-3 \end{array} \right\} \left. \begin{array}{l} x+1=0 \\ x=-1 \end{array} \right.$$

$$\begin{array}{l} x = -3 \\ x = -1 \\ x + 1 \\ x + 3 \end{array}$$

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Practice Worksheet - Answers

1) $(x-1)(x-5) = 0$
 $x-1=0 \quad x-5=0$
 $x=1 \quad x=5$

2) $(x-2)(x-9) = 0$
 $x-2=0 \quad x-9=0$
 $x=2 \quad x=9$

3) $(x-2)(x+4) = 0$
 $x-2=0 \quad x+4=0$
 $x=2 \quad x=-4$

4) $(2x+1)(x-6) = 0$
 $2x+1=0 \quad x-6=0$
 $x=-\frac{1}{2} \quad x=6$

5) $x^2 - 3x = 0$
 $x(x-3) = 0$
 $x=0 \quad x-3=0$
 $x=0 \quad x=3$

6) $x^2 + 4x + 3 = 0$
 $(x+1)(x+3) = 0$
 $x+1=0 \quad x+3=0$
 $x=-1 \quad x=-3$

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7) $x^2 + 5x - 6 = 0$
 $(x+6)(x-1) = 0$
 $x+6=0 \quad x-1=0$
 $x=-6 \quad x=1$

8) $x^2 + 11x + 24 = 0$
 $(x+3)(x+8) = 0$
 $x+3=0 \quad x+8=0$
 $x=-3 \quad x=-8$

9) $x^2 - 12x + 11 = 0$
 $(x-1)(x-11) = 0$
 $x-1=0 \quad x-11=0$
 $x=1 \quad x=11$

10) $x^2 + 18x + 45 = 0$
 $(x+3)(x+15) = 0$
 $x+3=0 \quad x+15=0$
 $x=-3 \quad x=-15$

11) $x^2 - 4x - 12 = 0$
 $(x-6)(x+2) = 0$
 $x-6=0 \quad x+2=0$
 $x=6 \quad x=-2$

12) $x^2 + 11x + 10 = 0$
 $(x+1)(x+10) = 0$
 $x+1=0 \quad x+10=0$
 $x=-1 \quad x=-10$

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13) $x^2 + 11x + 35 = 0$
 $(x+5)(x+7) = 0$
 $x+5=0 \quad x+7=0$
 $x=-5 \quad x=-7$

14) $2x^2 - 3x - 5 = 0$
 $(x+1)(2x-5) = 0$
 $x+1=0 \quad 2x-5=0$
 $x=-1 \quad x=\frac{5}{2}$

15) $3x^2 - 5x - 2 = 0$
 $(x+1)(3x-2) = 0$
 $x+1=0 \quad 3x-2=0$
 $x=-1 \quad x=\frac{2}{3}$

16) $x^2 - 3x - 40 = 0$
 $(x-8)(x+5) = 0$
 $x-8=0 \quad x+5=0$
 $x=8 \quad x=-5$

17) $x^2 - 14 = 5x$
 $x^2 - 5x - 14 = 0$
 $(x-7)(x+2) = 0$
 $x-7=0 \quad x+2=0$
 $x=7 \quad x=-2$

18) $2x^2 = -8x^2$
 $8x^2 + 2x^2 = 0$
 $(4x^2)(2x^2) = 0$
 $4x^2=0 \quad 2x^2=0$
 $x=0 \quad x=0$

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16) $x = 10x^2 - 2$
 $-10x^2 + x + 2 = 0$
 $(5x+2)(-2x+1) = 0$
 $5x+2=0 \quad -2x+1=0$
 $x=-\frac{2}{5} \quad x=\frac{1}{2}$

20) $2x^2 = 13x + 7$
 $2x^2 - 13x - 7 = 0$
 $(2x+1)(x-7) = 0$
 $2x+1=0 \quad x-7=0$
 $x=-\frac{1}{2} \quad x=7$

21) $6x^2 + x = 5$
 $6x^2 + x - 5 = 0$
 $(x+1)(6x-5) = 0$
 $x+1=0 \quad 6x-5=0$
 $x=-1 \quad x=\frac{5}{6}$

22) $x^2 = 5x$
 $x^2 - 5x = 0$
 $x(x-5) = 0$
 $x=0 \quad x-5=0$
 $x=0 \quad x=5$

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23) $h = -16t^2 + 64t + 56$

When $h=0$ The flare hits the water

$$0 = -16t^2 + 64t + 56$$

$$(8t+56)(-2t+1) = 0$$

$$8t+56=0 \quad -2t+1=0$$

$$t = -7 \quad t = \frac{1}{2}$$

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