

## Quad Equations Review2

Math 20-2

Solve Equation Review – day 2

1. Solve at least two equations by factoring. Solve with exact values.

a)  $x^2 + 2x - 15 = 0$

b)  $4x^2 - 11x + 6 = 0$

c)  $x^2 - 3x = 40$

a)  $x^2 + 2x - 15 = 0$

$$x^2 + 5x - 3x - 15 = 0$$

$$x(x+5) - 3(x+5) = 0$$

$$(x-3)(x+5) = 0$$

$$x-3=0 \quad x+5=0$$

$$x=3 \quad x=-5$$

b)  $4x^2 - 11x + 6 = 0$

$$4x^2 - 8x - 3x + 6 = 0$$

$$4x(x-2) - 3(x-2) = 0$$

$$(4x-3)(x-2) = 0$$

$$4x-3=0 \quad x-2=0$$

$$4x=3 \quad x=2$$

$$x = \frac{3}{4}$$

c)  $x^2 - 3x = 40$

$$x^2 - 3x - 40 = 0$$

$$x^2 - 8x + 5x - 40 = 0$$

$$x(x-8) + 5(x-8) = 0$$

$$(x+5)(x-8) = 0$$

$$x+5=0 \quad x-8=0$$

$$x=-5 \quad x=8$$

## Quad Equations Review2

2. Solve at least two equations using the quadratic formula. Solve with exact values.

a)  $3x^2 + 5x - 12 = 0$

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

c)  $5x^2 = 3x + 8$

a)  $3x^2 + 5x - 12 = 0$

$a=3$   $b=5$   $c=-12$

$b^2=25$

$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

$x = \frac{-5 \pm \sqrt{25 - 4(3)(-12)}}{2(3)}$  25+144

$x = \frac{-5 \pm \sqrt{169}}{6} \dots \frac{-5 \pm 13}{6}$

$x = \frac{-5+13}{6}$

$x = \frac{-5-13}{6}$

$x = \frac{8}{6} = \frac{4}{3}$

$x = \frac{-18}{6} = -3$

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

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

$a=1$   $b=4$   $c=-2$

$b^2=16$

$x = \frac{-4 \pm \sqrt{16 - 4(1)(-2)}}{2(1)}$

$x = \frac{-4 \pm \sqrt{24}}{2}$

$\sqrt{24} = \sqrt{4 \cdot 6}$

$x = \frac{-4 \pm 2\sqrt{6}}{2}$

$x = -2 \pm \sqrt{6}$

c)  $5x^2 = 3x + 8$

$5x^2 - 3x - 8 = 0$

$a=5$   $b=-3$   $c=-8$

$b^2=9$

$x = \frac{3 \pm \sqrt{9 - 4(5)(-8)}}{2(5)}$  9+160

$x = \frac{3 \pm \sqrt{169}}{10}$

$x = \frac{3+13}{10}$

$x = \frac{3-13}{10}$

$x = \frac{16}{10} = \frac{8}{5}$

$x = \frac{-10}{10} = -1$

## Quad Equations Review2

3. Solve any method. Round answers to two decimal places or exact values.

a)  $x^2 - 4x - 8 = 0$

b)  $2x^2 - 5 = x + 1$

a)  $x^2 - 4x - 8 = 0$

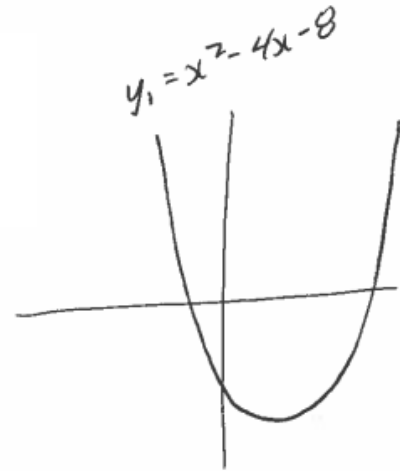
$a=1$   $b=-4$   $c=-8$   
 $b^2=16$

$x = \frac{4 \pm \sqrt{16 - 4(1)(-8)}}{2(1)}$       $16 + 32 = 48$

$x = \frac{4 \pm \sqrt{48}}{2}$       $\sqrt{48} = \sqrt{16 \times 3}$

$x = \frac{4 \pm 4\sqrt{3}}{2}$

$x = 2 \pm 2\sqrt{3}$



"CALC ZERO"

$x = -1.46$       $x = 5.46$

b)  $2x^2 - 5 = x + 1$

$2x^2 - x - 6 = 0$

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

$2x(x-2) + 3(x-2) = 0$

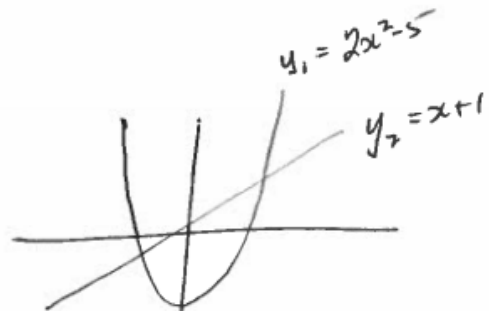
$(2x+3)(x-2) = 0$

$2x+3=0$       $x-2=0$

$2x=-3$       $x=2$

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

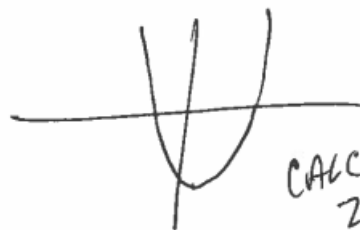
$x = -1.5$



intersect  $x =$       $x =$

OR

$y_1 = 2x^2 - x - 6$



CALC ZERO

$x =$       $x =$