

Review Worksheet for Unit 3 Quiz

Name _____ Date _____

Solve by using the zero-product property.

1) $x(3x+12)=0$

$x=0$ $3x+12=0$
 $x=-4$

2) $(x-4)(2x-8)=0$

~~$x-4=0$~~ $2x-8=0$
 $x=4$ $x=4$

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

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

4) $(6x+6)(6x-6)=0$

$6x+6=0$ $6x-6=0$
 $x=-1$ $x=1$

Solve by factoring.

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

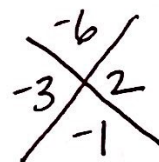
$(2x-3)(2x+3)=0$

$2x-3=0$ $2x+3=0$
 $x=3/2$ $x=-3/2$

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

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

$x=3$ $x=-2$



7) $4x^2=4x+15$

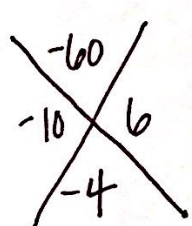
$4x^2-4x-15=0$

$(4x^2-10x)(+6x-15)=0$

$2x(2x-5)+3(2x-5)=0$

$(2x+3)(2x-5)=0$

$2x+3=0$ $2x-5=0$
 $x=-3/2$ $x=5/2$



8) $5x^2+x=4$

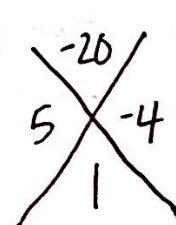
$5x^2+x-4=0$

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

$5x(x+1)-4(x+1)=0$

$(5x-4)(x+1)=0$

$5x-4=0$ $x+1=0$
 $x=4/5$ $x=-1$

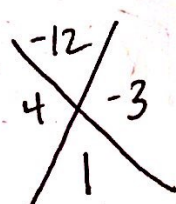


10) $(3x^2-12x)(x-4)=0$

$3x(x-4)+1(x-4)=0$

$(3x+1)(x-4)=0$

$3x+1=0$ $x-4=0$
 $x=-1/3$ $x=4$



9) $2x^2+x=6$

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

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

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

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

$2x-3=0$ $x+2=0$
 $x=3/2$ $x=-2$

$$11) 3x^2 + 6x = -3$$

$$3x^2 + 6x + 3 = 0$$

$$3(x^2 + 2x + 1) = 0$$

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

$$x+1=0 \quad x+1=0$$

$$\boxed{x = -1}$$

Solve by taking square roots.

$$13) x^2 - 49 = 0$$

$$\sqrt{x^2} = \sqrt{49}$$

$$\boxed{x = \pm 7}$$

$$15) x^2 + 16 = 32$$

$$\begin{array}{r} -16 \\ -16 \end{array}$$

$$\sqrt{x^2} = \sqrt{16}$$

$$\boxed{x = \pm 4}$$

$$17) 7x^2 + 1 = 29$$

$$\begin{array}{r} -1 \\ -1 \end{array}$$

$$7x^2 = 28$$

$$\frac{7x^2}{7} = \frac{28}{7}$$

$$\sqrt{x^2} = \sqrt{4}$$

$$\boxed{x = \pm 2}$$

$$18) \frac{2x^2 - 6}{2} = 15 \cdot 2$$

$$x^2 - 6 = 30$$

$$\sqrt{x^2} = \sqrt{36}$$

$$\boxed{x = \pm 6}$$

$$12) 3x^2 - x - 2 = 0$$

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

$$3x(x-1) + 2(x-1) = 0$$

$$(3x+2)(x-1) = 0$$

$$3x+2=0 \quad x-1=0$$

$$\boxed{x = -2/3}$$

$$\boxed{x = 1}$$

$$14) 2x^2 - 72 = 0$$

$$\frac{2x^2}{2} = \frac{72}{2}$$

$$\sqrt{x^2} = \sqrt{36}$$

$$\boxed{x = \pm 6}$$

$$16) 8x^2 - 7 = 193$$

$$\begin{array}{r} +7 \\ +7 \end{array}$$

$$\frac{8x^2}{8} = \frac{200}{8}$$

$$\sqrt{x^2} = \sqrt{25}$$

$$\boxed{x = \pm 5}$$

$$\begin{array}{r} 1 \\ 1 \\ \hline 2 \end{array}$$

$$\begin{array}{r} -6 \\ -3 \\ \hline -1 \end{array}$$