Name key

Algebra II Practice Quiz 6.3

Solve each equation by factoring. Circle your answers.

1. $x^2 = 11x$

$-11x - 11x$

$x^2 - 11x = 0$

$x(x-11) = 0$

$x = 0$ $\quad x - 11 = 0$

$+11 \quad +11$

$x = 11$

$\{0, 11\}$

2. $x^2 + 6x - 16 = 0$

$x - 16 \mid +6$

$8, -2$

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

$x + 8 = 0$ $\quad x - 2 = 0$

$-8 \quad -8$ $\quad +2 \quad +2$

$x = -8$ $\quad x = 2$

$\{-8, 2\}$

3. $x^2 + 9 = 6x$

$-6x \quad -6x$

$x^2 - 6x + 9 = 0$

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

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

$x = 3 \quad x = 3$

$\{3\}$

$\times 9$	$+ -6$
$-3, -3$	

4. $x^2+8x+12=0$

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

×	12	+8
6, 2		

$x+6=0$ $\quad$ $x+2=0$

$-6\ -6$ $\quad$ $-2\ -2$

$x=-6$ $\quad$ $x=-2$

$\{-6,-2\}$

5. $6x^2 + 6 = -13x$

$+13x \quad +13x$

$6x^2 + 13x + 6 = 0$

$\times 36 \mid +13$

$9, 4$

$(6x^2 + 9x)(+4x + 6) = 0$

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

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

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

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

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

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

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

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

$\left\{-\frac{2}{3}, -\frac{3}{2}\right\}$

6. $2x^2 - 5x - 3 = 0$

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

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

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

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

$-1 \quad -1$ $\quad +3 \quad +3$

$\frac{2x}{2} = \frac{-1}{2}$ $\quad x = 3$

$x = -\frac{1}{2}$

x	-6	$+-5$
$-6, 1$		

$\left\{-\frac{1}{2}, 3\right\}$

7. $x^2 = 64$

$-64 \quad -64$

$x^2 - 64 = 0$

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

$x - 8 = 0 \qquad x + 8 = 0$

$+8 \quad +8 \qquad -8 \quad -8$

$x = 8 \qquad x = -8$

$\{8, -8\}$

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

$-2 \quad -2$

$4x^2 + 7x - 2 = 0$

$(4x^2 - 1x) + (8x - 2) = 0$

$x(4x-1) + 2(4x-1) = 0$

$(x+2)(4x-1) = 0$

$x+2=0 \qquad 4x-1=0$

$-2 \quad -2 \qquad +1 \quad +1$

$x = -2 \qquad \frac{4x}{4} = \frac{1}{4} \quad x = \frac{1}{4}$

$x-8$	$+7$
$-1, 8$	

$\{-2, \frac{1}{4}\}$

Write a quadratic equation with the given roots.

9. -2, 7

$(x+2)(x-7)=0$

$x^2-7x+2x-14=0$

$x^2-5x-14=0$

10. $\frac{-2}{3}, \frac{3}{4}$

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

$12x^2-9x+8x-6=0$

$12x^2-x-6=0$

11. 0, -5

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

$x^2+5x=0$

12. $\frac{1}{3}, 5$

$(3x-1)(x-5)=0$

$3x^2-15x-1x+5=0$

$3x^2-16x+5=0$