

Math 2
 Unit 2 – Quadratic Functions
 Lesson 6 – Factoring (Trinomials) – HOMEWORK

Name _____

Date _____ Pd _____

Factor Completely:

<p>1. $x^2 - 2x - 48$</p> <p>$(x-8)(x+6)$</p> <p>1 48 2 24 3 16 4 12 6 8</p>	<p>2. $x^2 + 10x + 24$</p> <p>$(x+6)(x+4)$</p> <p>1 24 2 12 3 8 6 4</p>	<p>3. $x^2 - 8x + 12$</p> <p>$(x-2)(x-6)$</p> <p>1 12 2 6 3 4</p>
<p>4. $x^2 + 2x - 8$</p> <p>$(x-2)(x+4)$</p> <p>1 8 -2 4</p>	<p>5. $x^2 - 1x - 72$</p> <p>$(x-9)(x+8)$</p> <p>1 72 2 36 3 24 4 18 6 12 8 9</p>	<p>6. $x^2 - 3x - 18$</p> <p>$(x+3)(x-6)$</p>
<p>7. $x^2 - 5x - 36$</p> <p>$(x-9)(x+4)$</p> <p>1 36 2 18 3 12 4 9 6 6</p>	<p>8. $x^2 + 9x + 14$</p> <p>$(x+2)(x+7)$</p> <p>1 14 2 7 7 2</p>	<p>9. $x^2 + 5x - 36$</p>
<p>10. $x^2 - x - 12$</p> <p>$(x-4)(x+3)$</p> <p>1 12 2 6 3 4 4 3 6 2</p>	<p>11. $3x^2 - 2x - 5$</p> <p>$x^2 - 2x - 15$</p> <p>$(x-5)(x+3)$</p> <p>$(3x-5)(x+1)$</p> <p>1 15 3 5</p>	<p>12. $2x^2 + 3x - 9$</p>
<p>13. $3x^2 - 8x + 4$</p>	<p>14. $5x^2 + 19x + 12$</p>	<p>15. $2x^2 + 11x = 5$</p> <p>$2x^2 + 11x - 5 = 0$</p>
<p>16. $2x^2 + 5x + 2$</p>	<p>17. $7x^2 + 53x + 28$</p>	<p>18. $9x^2 + 66x + 21$</p> <p>$3(3x^2 + 22x + 7)$</p> <p>$3(x^2 + 22x + 21)$</p> <p>$3(x+21)(x+1) = 0$</p> <p>$3(x+7)(3x+1) = 0$</p>

➤ Solving Quadratic Equations by Factoring → Equation must be equal to 0 and factored completely

<p>A. $(x - 4)(3x - 1) = 0$</p> <p>$x - 4 = 0$ $+4 +4$ $x = 4$</p> <p>$3x - 1 = 0$ $-1 +1$ $\frac{3x}{3} = \frac{1}{3}$ $x = \frac{1}{3}$</p> <p>$x = \frac{1}{3}, 4$</p> <p>x = _____</p>	<p>B. $x^2 - 5x - 6 = 0$ SM $\frac{1}{2} \frac{6}{3}$</p> <p>$(x - 6)(x + 1) = 0$</p> <p>$x - 6 = 0$ $+6 +6$ $x = 6$</p> <p>$x + 1 = 0$ $-1 -1$ $x = -1$</p> <p>$x = -1, 6$</p> <p>x = _____</p>	<p>C. $3x^2 - 5x + 2 = 0$</p> <p>$x^2 - 5x + 6 = 0$</p> <p>$(x - 2)(x - 3) = 0$ $\frac{2}{3} \frac{3}{3}$</p> <p>$(3x - 2)(x - 1) = 0$</p> <p>$3x - 2 = 0$ $3x = 2$ $x = \frac{2}{3}$</p> <p>$x - 1 = 0$ $+1 +1$ $x = 1$</p> <p>$x = \frac{2}{3}, 1$</p> <p>x = _____</p>
<p>D. $x^2 - 3x = 0$</p> <p>$x(x - 3) = 0$</p> <p>$x = 0$ $x = 3$</p> <p>$x = 0, 3$</p> <p>x = _____</p>	<p>E. $x^3 - 3x^2 = 10x$</p> <p>$-10x - 10x$</p> <p>$x^3 - 3x^2 - 10x = 0$</p> <p>$x(x^2 - 3x - 10) = 0$ +10</p> <p>$x(x - 5)(x + 2) = 0$ +2 -5</p> <p>$x = 0$ $x = 5$ $x = -2$</p> <p>$x = -2, 0, 5$</p> <p>x = _____</p>	<p>F. $x^2 = 36$</p> <p>$-36 - 36$</p> <p>$x^2 - 36 = 0$</p> <p>$(x - 6)(x + 6) = 0$</p> <p>$x = 6$ $x = -6$</p> <p>$x = -6, 6$</p> <p>x = _____</p>

➤ Solve each equation by factoring: (You should be finding 2 solutions!!)

<p>1. $x^2 - 5x = 0$</p> <p>$x(x-5)$</p> <p>$x = 0, 5$</p>	<p>2. $x^2 + x - 30 = 0$</p> <p>$(x+6)(x-5)$</p> <p>$x = 5, -6$</p>
<p>3. $3x^2 - 5x = 0$</p> <p>$x(3x-5)$</p> <p>$x = 0, 5/3$</p>	<p>4. $4x^2 - 25 = 0$</p> <p>$(2x-5)(2x+5) = 0$</p> <p>$x = 5/2, -5/2$</p>
<p>5. $4x^2 - 13x - 12 = 0$</p> <p>$x^2 - 13x - 48 = 0$</p> <p>$(x-16)(x+3) = 0$</p> <p>$(x-4)(4x+3) = 0$</p> <p>$x = -3/4, 4$</p>	<p>6. $4x^2 - 17x + 4 = -4$</p> <p>$4x^2 - 17x + 4 = 0$</p> <p>$x^2 - 17x + 16 = 0$</p> <p>$(x-16)(x-1) = 0$</p> <p>$(x-4)(4x-1) = 0$</p> <p>$x = 4, 1/4$</p> <p>$x-4=0 \Rightarrow x=4$ $4x-1=0 \Rightarrow x=1/4$</p>
<p>7. $6x^2 + 7x - 3 = 3$</p> <p>$6x^2 + 7x - 3 = 0$</p> <p>$x^2 + 7x - 18 = 0$</p> <p>$(x+9)(x-2) = 0$</p> <p>$(2x+3)(3x-1) = 0$</p> <p>$x = -3/2, 1/3$</p>	<p>8. $18x^2 - 34x + 16 = 0$</p> <p>$2(9x^2 - 17x + 8) = 0$</p> <p>$2(x^2 - 17x + 72) = 0$</p> <p>$2(x-8)(x-9) = 0$</p> <p>$x = 8, 9$</p>

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

$x = -3/2, 1/3$

$2(9x-8)(x-1)$

$2 \neq 0$ $9x=8$ $x=1$

$$\overline{9} \ 9$$

$$x = 8/9$$

$$x = 8/9, 1$$