

Algebra Worksheet – Section 10.5
Factoring Polynomials of the form

Name _____
Block _____

$$x^2 + bx + c$$

Factor

1. $x^2 + 3x + 2$ $\frac{2}{2 \cdot 1}$
 $(x+2)(x+1)$

3. $x^2 + x - 6$ $\frac{\text{Mult}-6}{-6 \cdot 1}$ Add 1
 $(x-2)(x+3)$
 $-1 \cdot 4$
 $-3 \cdot 2$
 $-2 \cdot 3$

5. $a^2 - 2a - 35$
 $(a-7)(a+5)$

7. $b^2 + 7b - 8$ $\frac{\text{Mult}-8}{-4 \cdot 2}$ Add 7
 $(b-1)(b+8)$
 $-2 \cdot 4$
 $-8 \cdot 1$

9. $x^2 - 4x - 45$ $\frac{-1 \cdot 8}{-1 \cdot 8}$
 $(x-9)(x+5)$

11. $p^2 + 12p + 27$
 $(p+9)(p+3)$

13. $b^2 + 3b - 40$ $\frac{-40}{-8 \cdot 5}$
 $(b+8)(b-5)$ $8 \cdot -5$

15. $c^2 + 11c + 18$
 $(c+9)(c+2)$

Solve each equation by factoring

17. $x^2 + 5x + 6 = 0$

19. $y^2 - y - 72 = 0$

2. $x^2 - x - 2$
 $(x-2)(x+1)$

4. $a^2 + a - 12$ $\frac{\text{Mult}-12}{-12 \cdot 1}$ Add 1
 $(a-3)(a+4)$
 $-1 \cdot 2$
 $-1 \cdot 12$ $\frac{-3 \cdot 4}{-3 \cdot 4}$
 $-6 \cdot 2$
 $-2 \cdot 6$

6. $b^2 + 8b + 16$
 $(b+4)(b+4) = (b+4)^2$

8. $y^2 - y - 6$
 $(y-3)(y+2)$

10. $y^2 - 8y + 15$ $\frac{15}{5 \cdot 3}$ $\frac{-8}{-8}$
 $(y-5)(y-3)$

12. $b^2 + 9b + 20$
 $(b+4)(b+5)$

14. $a^2 - 15a + 36$ $\frac{36}{-3 \cdot -12}$
 $(a-3)(a-12)$

16. $x^2 + 21x + 100$ $\frac{100}{10 \cdot 10}$
Does not factor $20 \cdot 5$
 $25 \cdot 4$

18. $b^2 - b - 20 = 0$ $\frac{50 \cdot 2}{100 \cdot 1}$

20. $x^2 - 12x = -11$