

To solve each equation by factoring. (1) Make sure equation is equal to zero (2) Factor (3) Set EACH FACTOR EQUAL TO ZERO and solve for the variable.

$$15) (n+1)(n+7) = 0$$

$$n+1=0 \quad | \quad n+7=0$$

$$n=-1 \quad | \quad n=-7$$

$$n = -1, -7$$

$$16) (x+4)(x+7) = 0$$

$$\{-4, -7\}$$

$$17) k^2 - k - 42 = 0$$

$$(k-7)(k+6) = 0$$

$$k-7=0 \quad | \quad k+6=0$$

$$k=7 \quad | \quad k=-6$$

$$\{7, -6\}$$

$$18) n^2 - 10n + 21 = 0$$

$$\{3, 7\}$$

$$19) 15b^2 - 49b + 24 = 0$$

$$15b^2 - 9b - 40b + 24 = 0$$

$$3b(5b-3) - 8(5b-3) = 0$$

$$(3b-8)(5b-3) = 0$$

$$3b-8=0 \quad | \quad 5b-3=0$$

$$b=8/3 \quad | \quad b=3/5$$

$$\{8/3, 3/5\}$$

$$21) 7x^2 + 25x - 16 = -4$$

$$+4 \quad +4$$

$$7x^2 + 25x - 12 = 0$$

$$7x^2 + 28x - 3x - 12 = 0$$

$$7x(x+4) - 3(x+4) = 0$$

$$(7x-3)(x+4) = 0$$

$$x = 3/7, -4$$

$$20) 35r^2 - 29r - 28 = 0$$

$$\{7/5, -4/7\}$$

$$22) 3b^2 + 19b + 23 = -5$$

$$\{-7/3, -4\}$$