

Factor completely

1.  $15x^2 - 3x$

$3x(5x-1)$

2.  $12x^2 - 11x - 5$

$(3x+1)(4x-5)$

3.  $x^2 - 13x + 30$

$(x-3)(x-10)$

4.  $m^3 - 4m^2 + 3m - 12$

$m^2(m-4) + 3(m-4)$

$(m-4)(m^2+3)$

Solve by Factoring

5.  $x^2 + 4x + 3 = 0$

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

$x = -3, -1$

6.  $x^2 - 7x + 6 = 0$

$(x-6)(x-1) = 0$

$x = 6, 1$

7.  $x^2 - 6x - 7 = 0$

$(x-7)(x+1) = 0$

$x = 7, -1$

8.  $x^2 - x - 2 = 0$

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

$x = -1, 2$

9.  $x^2 + 10x + 16 = 0$

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

$x = -2, -8$

10.  $x^2 - 4 = 0$

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

$x = -2, 2$

11.  $x^2 + x - 30 = 0$

$(x+6)(x-5) = 0$

$x = 5, -6$

12.  $x^2 - 36 = 0$

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

$x = 6, -6$

13.  $x^2 + 9x + 20 = 0$

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

$x = -4, -5$

14.  $9x^2 + x = 0$

$x(9x+1) = 0$

$x = 0, -\frac{1}{9}$

15.  $-15x^2 + 7x = 0$

$x(-15x+7) = 0$

$x = 0, \frac{7}{15}$

16.  $9x^2 + 18x + 9 = 0$

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

$x = -1$

17.  $x^2 - 3x - 18 = 0$

$(x-6)(x+3) = 0$

$x = 6, -3$

18.  $51x + 9x^2 = 0$

$51x + 9x^2 = 0$

$3x(17+3x) = 0$

$x = 0, -\frac{17}{3}$

19.  $6x^2 - 11x - 10 = 0$

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

$x = \frac{5}{2}, -\frac{2}{3}$

Name: \_\_\_\_\_

Solve by Factoring

20.  $2x^4 - 8x^3 + 6x^2 = 0$

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

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

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

$x = 0 \quad x = 1 \quad x = 3$

23.  $-2x^2 + 5x + 12 = 0$

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

$x = -\frac{3}{2} \quad x = 4$

25.  $2x^2 + 7x + 5 = 0$

$(2x+5)(x+1) = 0$

$x = -\frac{5}{2} \quad x = -1$

27.  $4x^2 - 17x + 15 = 0$

$(4x-5)(x-3) = 0$

$x = \frac{5}{4} \quad x = 3$

29.  $3x^2 + 8x + 4 = 0$

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

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

21.  $10x^2 - 9x - 1 = 0$

$(10x+1)(x-1) = 0$

$x = -\frac{1}{10} \quad x = 1$

22.  $7x^2 - 3x - 10 = 0$

$(7x-10)(x+1) = 0$

$x = \frac{10}{7} \quad x = -1$

24.  $9x^2 + 9x + 2 = 0$

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

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

26.  $10x^2 + 17x + 7 = 0$

$(10x+7)(x+1) = 0$

$x = -\frac{7}{10} \quad x = -1$

28.  $6x^2 + 14x + 4 = 0$

$2(3x^2 + 7x + 2) = 0$

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

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

30.  $2x^2 - 11x + 14 = 0$

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

$x = \frac{7}{2} \quad x = 2$