



## ACT COMPASS Preparation Worksheet

### Algebra: Basic Operations/ Polynomials

- $(9b^2 - 12b - 12) - (-4b^2 - 24b - 32) = 13b^2 + 12b + 20$
- $(2y^4 - y^2 - 15) + (4y^2 - 36) = 2y^4 + 3y^2 - 51$
- $(-2c^4 + 20c^2 - 42) + (c^4 + 4c^2 - 3c) = -c^4 + 24c^2 - 3c - 42$
- $(7x^3 + 3x^2 - 4x - 10) - (4x^3 - 3x^2 + 12x + 1) = 3x^3 + 6x^2 - 16x - 11$
- $(-2x^4 + 20x^2 - 42) - (x^2 - 49) = -2x^4 + 19x^2 + 7$
- $(x^2 - 8) - (4x^2 - 3x + 5) = -3x^2 + 3x - 13$
- $(-6m^2 - 8m + 5) - (-5m^2 + 7m - 8) = -m^2 - 15m + 13$
- $(4x^2 - 5x + 2) + (-9x^2 + 3x - 7) = -5x^2 - 2x - 5$
- $(3x^5 - 9x^3 + 4x^2) + (-8x^5 + 8x^3 + 2) = -5x^5 - x^3 + 4x^2 + 2$
- $(4x^4 - 3x^2 - 5x + 2) - (-2x^4 + 3x^3 - 4x + 7) = 6x^4 - 3x^3 - 3x^2 - x - 5$
- $(3x^2)(5x^3) = 15x^5$
- $(4x^4)(-3x^2) = -12x^6$
- $(8y^3)(-4y^5) = -32y^8$
- $(2z)(-3z)(4z^5) = -24z^7$
- $3x(4x - 7) = 12x^2 - 21x$
- $5x(-2x + 9) = -10x^2 + 45x$
- $8x^3(4x^2 + 3x + 2) = 32x^5 + 24x^4 + 16x^3$
- $-9x^2(3x^3 + 7x - 2) = -27x^5 - 63x^3 + 18x^2$
- $(x + 3)(x + 5) = x^2 + 8x + 15$
- $(7x + 6)(2x + 3) = 14x^2 + 33x + 18$



21.  $(5x + 8)(2x + 1) = 10x^2 + 21x + 8$

22.  $(x - 3)(x - 5) = x^2 - 8x + 15$

23.  $(3x - 7)(x - 1) = 3x^2 - 10x + 7$

24.  $(6x - 2)(7x - 6) = 42x^2 - 50x + 12$

25.  $(x^2 - 1)(x + 3) = x^3 + 3x^2 - x - 3$

26.  $(2x + 4)(x^2 - 8) = 2x^3 + 4x^2 - 16x - 32$

27.  $(x - 5)(x^2 - 7x - 2) = x^3 - 12x^2 - 33x + 10$

28.  $(x + 2)(x^2 - 2x + 4) = x^3 + 8$

29.  $(x + 8)^2 = x^2 + 16x + 64$

30.  $(2x - 7)^2 = 4x^2 - 28x + 49$

31.  $(3x + 1)^2 = 9x^2 + 6x + 1$

32.  $(x + 4)(x - 4) = x^2 - 16$

33.  $(x^2 + 5)(x^2 - 5) = x^4 - 25$

34.  $\frac{3x^5 + 3x^3 + 18x}{6} = \frac{1}{2}x^5 + \frac{1}{2}x^3 + 3x$

35.  $\frac{y - 4y^2 + y^4}{y} = 1 - 4y + y^3$

36.  $\frac{27x^8 - 15x^4 + 3x^2}{x^2} = 27x^6 - 15x^2 + 3$

37.  $\frac{25x^7 - 20x^4 + 5x^2}{-5x^2} = -5x^5 + 4x^2 - 1$

38.  $\frac{36y^5 + 27y^4 - 18y^3}{9y^2} = 4y^3 + 3y^2 - 2y$

39.  $\frac{8r^2s^2 + 10rs^3 - 6r^2s}{-2rs} = -4rs - 5s^2 + 3r$

40.  $\frac{7x^3y^2 - 21x^2y + 35x^3y^4}{7x^2y} = xy - 3 + 5xy^3$