

YOUR NAME: _____

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Read each problem **very carefully** before starting to solve it. Each problem is worth 10 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. Use the laws of exponents to simplify the following expressions and write your answers without negative exponents.

(a)

$$\frac{(-3x^{-5}y)(-5xy^6)}{-15x^{-6}y^2}$$

(b)

$$\frac{(2x^{-2}y)^{-3}}{(2xy^{-1})^2}(2x^2y^{-7})$$

2. Perform the following operations:

(a)

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

(b)

$$[x^2 - 3 - (x^2 + 5x - 4)] - [x - 3(x^2 - 5x)]$$

3. Perform the following operations:

(a)

$$(3x - 5y)^2$$

(b)

$$(3x + 2)^3$$

4. Factor completely:

(a)

$$2x^2 + 7x + 3$$

(b)

$$a^2x + 3a^2 - 4x - 12$$

5. (a) Factor completely $2xy^2 - 27xy + 70x$.

(b) Solve for x the equation $2x - 11x^2 = 6x^3$.