

# Polynomials Practice Test

## Extra Suggested Practice

Section 5.5 - #1-3all, 4-9half

1. For each polynomial, answer the following questions:

$$5xy - y - 4$$

$$10a^2b^2 + bd + 2^2c^3 - 1$$

- a) How many terms are in the polynomial? \_\_\_\_\_
- b) What are the variables in the polynomial? \_\_\_\_\_
- c) What are the constants in the polynomial? \_\_\_\_\_
- d) What are the coefficients in the polynomial? \_\_\_\_\_
- e) What is the degree of the polynomial? \_\_\_\_\_

2. Explain why  $4x^2y$  and  $-3y^2x$  are **not** like terms

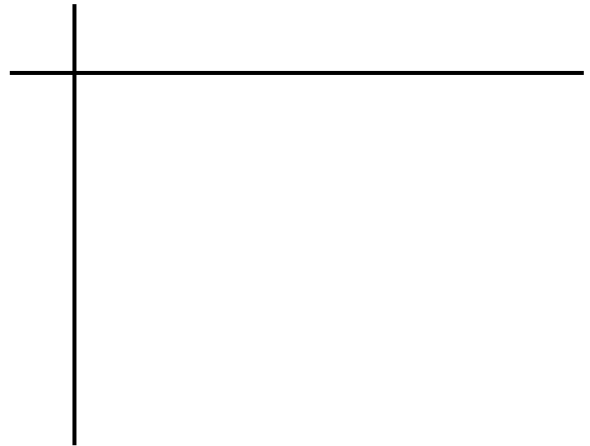
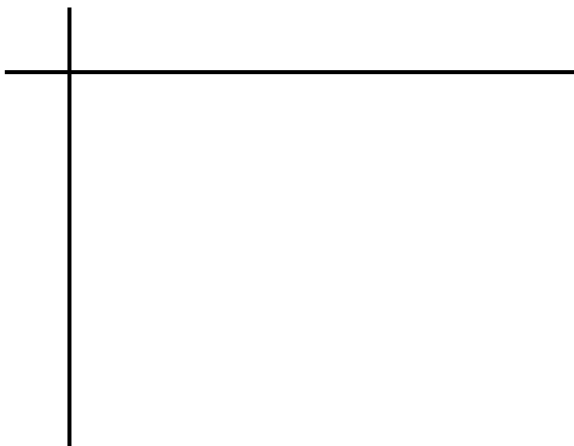
3. Draw the polynomial using **algebra tiles**. **Simplify** with tiles. Write out the answer using **variables**

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

4. **Draw algebra tiles** to multiply the following. Write your final answer using variables.

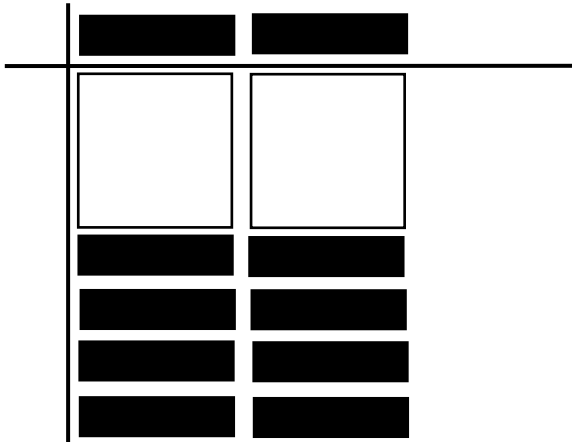
a.  $2x(2x - 1)$

b.  $-3x(-x + 2)$

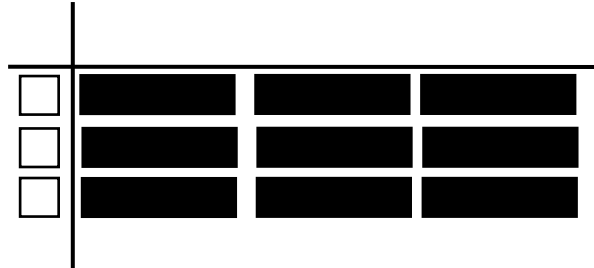


5. Complete the algebra tile divisions shown below. Write the question and answer using variables

a.



b.



6. Add and subtract the polynomials. Simplify completely.

a.  $-6x^2 + 2x - 5x^2 - 3 - 4x + 1$

d.  $(5b - 3) + (-3b + 2)$

b.  $(4a^2 + 4a - 1) + (-3a - 2a^2 + 3)$

e.  $(2x^2 + 8) - (5x^2 - 2)$

c.  $(5x - 6y + 2xy) - (3xy + 8x - 2y)$

f.  $(-5x^2 + 4x) + (8 - 3x^2 - 2x) - (-8x^2 - 6)$

7. Multiply the polynomials. Simplify completely.

a.  $(-4a^3b)(8b^4)$

d.  $-3(2y - 1)$

b.  $t^2(-3t + 6)$

e.  $-2x(-5x^4 - x^2 + 2)$

c.  $-4y^2(4 - xy + 5y)$

f.  $-a^2b(2a^3 - 8ab^2)$

8. Divide the following polynomials. Simplify completely.

a.  $\frac{-12a^5}{4a^2}$

d.  $\frac{14y^3+21y}{-7y}$

b.  $\frac{18p^7q^6}{p^2q}$

e.  $\frac{16x^4-8x^3+4x^2}{4x^2}$

c.  $\frac{6xyz-12xz}{6xz}$

f.  $\frac{15x^3y-20x^2+25xy^2}{-5x}$

9. Simplify completely.

a.  $4(3x^2 - 2x - 5) - 3x(-2x + 1)$

c.  $\frac{12x^2-6x}{3x} - \frac{8x^2-4x}{4}$

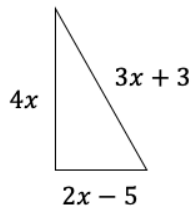
b.  $\frac{-15x^3+5x^2}{5x} - 3x(1 - 2x^2 - x)$

d.  $2y(3x - 5 + 2y) + \frac{4y^2-4xy+6}{-2}$

10. Explain all the errors, then write the correct solution

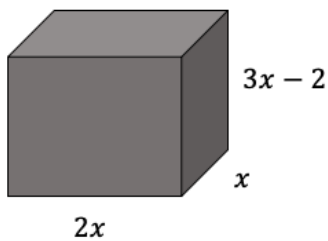
$$\frac{15x^3-30x^2+5x}{5x} = 3x + 6x + x$$

11. For the triangle below:
- Find the perimeter
  - Find the area



12. Find the **length** of a rectangle that has an area of  $30x^3 - 12x$  and a width of  $3x$ . (Hint: Draw a picture)

13. For the shape below:
- Find the volume
  - Find the surface area



14. The perimeter of the rectangle below is  $26x + 6$ .
- Find the length of the rectangle (the missing side)
  - Find the area of the rectangle

