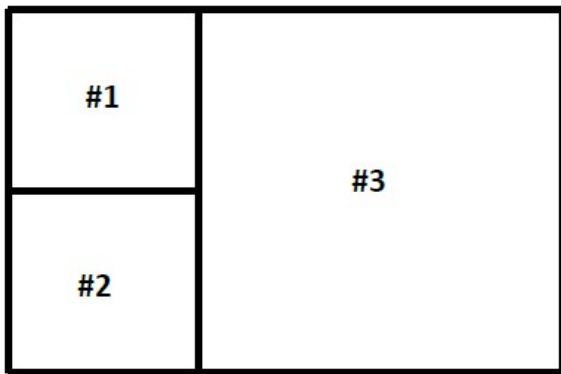


Name _____
Review 2
Arithmetic with Polynomials

Algebra 1 Final
A-APR.1

1. A rectangle with positive area has length represented by the expression $3x^2 + 2x - 4$ and width by $x^2 + 1$. Write expressions in terms of x for the perimeter and area of the rectangle. Give your answers in standard polynomial form and show your work.

2. The figure below is divided into three squares and the area of square #1 is equal to the area of square #2. If the area of square #1 is represented by the expression $x^2 + 4x + 4$. Determine the area of square #3.



3. What is the sum of $3a^2 + 4a - 2$ and $a^2 - 5a + 3$?

4. Simplify the expression $(3x^2 + 2xy + 7) - (6x^2 - 4xy + 3)$

5. Determine the result when $3m^2 - 2m + 5$ is subtracted from $m^2 + m - 1$?

6. Given the polynomials $P(x)$ and $Q(x)$ below

$$P(x) = x^3 + 3x^2 - 1$$

$$Q(x) = -2x^2 - x + 4$$

$R(x) = P(x) + Q(x)$ is equivalent to which of the following?

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

3. $R(x) = x^3 + x^2 - x + 3$

2. $R(x) = x^3 + x^2 - x + 5$

4. $R(x) = x^3 + x^2 + x$

7. Find the product of $\frac{2}{3}x$ and $\left(\frac{1}{2}x^2 + 6x - 3\right)$

8. Simplify: $(x + 5)(x - 6)$

9. Which expression represents $(3x^2y^4)(4xy^2)$ in simplest form?

- (1) $12x^2y^8$ (3) $12x^3y^8$
(2) $12x^2y^6$ (4) $12x^3y^6$

10. Which equation represents $\frac{27x^{18}y^5}{9x^6y}$ in simplest form?

- (1) $3x^{12}y^4$ (3) $18x^{12}y^4$
(2) $3x^3y^5$ (4) $18x^3y^5$

11. Which expression is equivalent to $(3x^2)^3$?

- (1) $9x^5$ (3) $27x^5$
(2) $9x^6$ (4) $27x^6$

12. What is the quotient $\frac{8xy + 6xy}{2x}$ of in simplest form

- (1) $\frac{14xy}{2x}$ (3) $4y + 3y$
(2) $7y$ (4) $7xy$

13. The expression $(x - 6)^2$ is equivalent to

- (1) $x^2 - 36$ (3) $x^2 - 12x + 36$
(2) $x^2 + 36$ (4) $x^2 + 12x + 36$

14. What is the product of $\frac{1}{3}x^2y$ and $\frac{1}{6}xy^3$?

- (1) $\frac{1}{2}x^2y^3$ (3) $\frac{1}{18}x^2y^3$
(2) $\frac{1}{9}x^3y^4$ (4) $\frac{1}{18}x^3y^4$