

Name _____

Each of the 18 questions is worth 5 points plus 1 points for each of 10 homework problems for a total of 100

Simplify the expression so that no negative exponents appear in the final result. Assume all variables represent nonzero numbers.

1) $(4x^{-5})^3(x^4)^{-5}$

Express the number in scientific notation.

2) 0.0000088913

Add or subtract as indicated.

3) $(7n^5 + 6n + 4n^4) + (7n^4 + 4n^5 + 4n)$

$$4) (-9x^2 + 2x^4 - 6 - 7x^3) - (8 + 3x^3 + 9x^4 - 5x^2)$$

Find the product.

$$5) (p + 9q)(p - 9q)$$

$$6) (8y - 7)(64y^2 + 56y + 49)$$

Divide.

$$7) \frac{x^2 + 8x + 15}{x + 5}$$

$$8) \frac{12x^3 - 7x^2 - 28x - 12}{4x + 3}$$

Factor out the greatest common factor. Simplify the factors, if possible.

$$9) 84x^9y^7 + 96x^4y^5 + 120x^6y^3$$

Factor by grouping.

10) $x^2 + 9x + 6x + 54$

Factor the trinomial completely.

11) $x^2 - x - 42$

12) $7x^2 - 21xy - 28y^2$

Factor the polynomial.

13) $81x^2 + 144xy + 64y^2$

Factor the polynomial completely.

14) $125a^3 - 8b^3$

15) $15x^2 + 26x + 8$

16) $12a^3 - 8a^2b - 9ab^2 + 6b^3$

Solve the equation.

17) $(x + 4)(x - 2)(x - 16) = 0$

Find all solutions by factoring.

18) $2x^2 + 56 = x^2 + 15x$