

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) $(4x^{-5})^4(x^2)^{-4}$

Express the number in scientific notation.

2) 0.0000038716

Add or subtract as indicated.

3) $(2n^5 + 4n - 6n^3) + (-7n^3 + 6n^5 - 7n)$

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

Find the product.

$$5) (p + 8q)(p - 8q)$$

$$6) (9y - 8)(81y^2 + 72y + 64)$$

Divide.

$$7) \frac{x^2 + 13x + 42}{x + 7}$$

$$8) \frac{-6x^3 - 11x^2 + 18x + 20}{-2x - 5}$$

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

$$9) 30x^9y^7 - 54x^4y^5 + 18x^7y^2$$

Factor by grouping.

10) $r^2 + 5r + 9r + 45$

Factor the trinomial completely.

11) $x^2 - x - 56$

12) $6x^2 - 18xy - 24y^2$

Factor the polynomial.

13) $16x^2 + 72xy + 81y^2$

Factor the polynomial completely.

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

15) $4x^2 + 12x + 9$

16) $24a^3 - 18a^2b - 20ab^2 + 15b^3$

Solve the equation.

17) $(x + 5)(x - 7)(x - 10) = 0$

Find all solutions by factoring.

18) $2x^2 + 10 = x^2 + 7x$