

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) $(5x^{-4})^2(x^3)^{-4}$

Express the number in scientific notation.

2) 0.0000042214

Add or subtract as indicated.

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

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

Find the product.

$$5) (p + 6q)(p - 6q)$$

$$6) (5y - 6)(25y^2 + 30y + 36)$$

Divide.

$$7) \frac{x^2 + 7x + 10}{x + 2}$$

$$8) \frac{-9x^3 - 15x^2 - 16x - 4}{-3x - 1}$$

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

$$9) 36x^8y^9 + 30x^3y^7 + 42x^6y^4$$

Factor by grouping.

10) $s^2 + 4s + 3s + 12$

Factor the trinomial completely.

11) $x^2 - x - 90$

12) $9x^2 - 27xy - 36y^2$

Factor the polynomial.

13) $36x^2 - 84xy + 49y^2$

Factor the polynomial completely.

14) $27a^3 - 64b^3$

15) $12x^2 + 17x + 6$

$$16) 10a^3 + 6a^2b - 15ab^2 - 9b^3$$

Solve the equation.

$$17) (x + 6)(x - 3)(x - 12) = 0$$

Find all solutions by factoring.

$$18) 2x^2 + 24 = x^2 + 11x$$