Ch 5 Unit Test

Name: _____   **Section:** _____

Simplify the following. Write your answers without negative exponents:

1) $\dfrac{-35x^8 y^3}{45x^2 y^9}$

2) $-4a^1(3a^3)^2$

3) $-6x^2 - 9$

4) $8^0 - (-2.5)^2$

5) $\left(\dfrac{-2x^6 y^{12}}{3x^2 y^4}\right)^2$

6) $-\dfrac{3}{7}a^2 + \dfrac{1}{7}a - \dfrac{11}{14}a^2$

7) $-3^4 + (-3)^4$

8) $\dfrac{-8f^{-5}}{14g^{-7}}$

Simplify each expression:

9) $(0.4x^2 - 1.25x - 1.1) + (3x^2 - 8.3x)$

10) Subtract $\dfrac{2}{3}y^2 - \dfrac{4}{9}y$ from $\dfrac{5}{9}y^2 - 7$.

11) $-5a^2(-\dfrac{2}{5}a^3 b + \dfrac{3}{5}a^2 b^2 - 4ab^3)$

12) $(3x - 4)(2x^2 - 5x + 6)$

13) $(3x + 2y)^2$

14) $(0.2x - 0.5)(0.3x + 0.4)$

15) $(1.2x - 1.7)^2$

16) $(9x - 5y)(9x + 5y)$

17) $(2x^3 - 15x^2 + 28x - 8) \div (2x - 3)$

18) $\dfrac{24x^3 y^2 - 36x^2 y + 12x^2 y^2}{12x^2 y^2}$

19) a) Convert 54,700 into scientific notation.
    b) Convert -7.54×10^{-5} into decimal notation.

20) Simplify following and write the answer in scientific notation:
    $\dfrac{(3.4 \times 10^{26})(-9.11 \times 10^{-31})}{8.5 \times 10^{-9}}$

21) Which of the following statements are true and which ones are false? Explain why.
    a) $(x + 5)^2 = x^2 + 25$
    b) $(5x)^2 = 25x^2$
    c) $(x - 6)^2 = x^2 + 36$
    d) $\left(\dfrac{x}{6}\right)^2 = \dfrac{x^2}{36}$

Answers:

1) $-\dfrac{7x^6}{9y^6}$ 2) $-36a^7$ 3) $-6x^2 - 9$ 4) -5.25 5) $\dfrac{4}{9}x^8y^{16}$

6) $-\dfrac{17}{14}a^2 + \dfrac{1}{7}a$ 7) 0 8) $-\dfrac{4g^7}{7f^5}$ 9) $3.4x^2 - 9.55x - 1.1$

10) $-\dfrac{1}{9}y^2 + \dfrac{4}{9}y - 7$ 11) $2a^5b - 3a^4b^2 + 20a^3b^3$

12) $6x^3 - 23x^2 + 38x - 24$ 13) $9x^2 + 12xy + 4y^2$

14) $0.06x^2 - 0.07x - 0.2$ 15) $1.44x^2 - 4.08x + 2.89$

16) $81x^2 - 25y^2$ 17) $x^2 - 6x + 5 + \dfrac{7}{2x+3}$ 18) $2x - \dfrac{3}{y} + 1$

19a) 5.47×10^4 19b) -0.0000754 20) -3.644×10^4

21) a & c are false, b & d are true