

SM2 In-Class #2-9 (Unit 2 Test Preview HW)

Date _____ Period _____

Simplify. Your answer should contain only positive exponents. There may not be any fractional exponents in the denominator.

1) $m^3 n^4 \cdot 2mn^2$

$2m^4 n^6$

2) $2x^3 y^{-2} \cdot (x^4 y^2)^0$

$\frac{2x^3}{y^2}$

3) $(m^4 - 5m^2) - (3m^2 - 5m^4)$

$6m^4 - 8m^2$

4) $(5k^3 + 8k) + (6k^3 + 5k)$

$11k^3 + 13k$

5) $4x^2(3x + 8)$

$12x^3 + 32x^2$

6) $\frac{3x^3 y^2}{4y^{-2}} \cdot \frac{3y^4 x^3}{4}$

7) $\frac{(x^3 y^2)^3}{x^{-3} y^{-4}}$

$x^{12} y^{10}$

8) $\frac{x^4 y^{-4}}{(2x)^4} \cdot \frac{1}{16y^4}$

Simplify.

9) $-3\sqrt{5} - 2\sqrt{3} + 2\sqrt{3}$

$-3\sqrt{5}$

10) $-5\sqrt{3}(5 + \sqrt{10})$

$-25\sqrt{3} - 5\sqrt{30}$

11) $\frac{\sqrt{27ab}}{3\sqrt{3ab}}$

12) $\frac{\sqrt{6}}{\sqrt{15}}$

$\frac{\sqrt{10}}{5}$

13) $\frac{3\sqrt{3}}{5\sqrt{5}} \cdot \frac{3\sqrt{15}}{25}$

14) $\frac{\sqrt{5}}{2\sqrt{2}} \cdot \frac{\sqrt{10}}{4}$

Write each expression in exponential form.

15) $(\sqrt[3]{6k})^2 \cdot (6k)^{\frac{2}{3}}$

16) $2 \cdot (\sqrt[3]{v})^4 \cdot 2v^{\frac{4}{3}}$

Write each expression in radical form.

$$17) (7x)^{\frac{3}{2}} (\sqrt{7x})^3$$

$$18) (2r^2)^{\frac{1}{6}} \sqrt[6]{2r^2}$$

Simplify. Your answer should contain only positive exponents with no fractional exponents in the denominator.

$$19) 3u^{\frac{1}{4}} v^{\frac{3}{2}} \cdot 3vu^2$$
$$9u^{\frac{9}{4}} v^{\frac{5}{2}}$$

$$20) \left(x^{\frac{2}{3}} y^{\frac{1}{4}}\right)^{\frac{3}{2}}$$
$$xy^{\frac{3}{8}}$$

$$21) \frac{a^{-\frac{3}{2}} b^{\frac{1}{4}}}{a^{\frac{7}{4}}} \frac{a^{\frac{3}{4}} b^{\frac{1}{4}}}{a^4}$$

Factor the common factor out of each expression.

$$22) 21x^3 + 7$$
$$7(3x^3 + 1)$$

$$23) 20 + 100x + 70x^2$$
$$10(2 + 10x + 7x^2)$$

Find each product.

$$24) (3v - 2)(v + 5)$$
$$3v^2 + 13v - 10$$

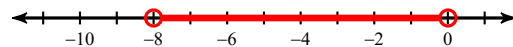
$$25) (3x + 4)(5x - 2)$$
$$15x^2 + 14x - 8$$

Solve each equation.

$$26) |v - 1| = 5$$
$$\{6, -4\}$$

Write the solution to the inequality in: (a) Simplified inequality notation, (b) Interval notation then (c) graph the solution.

$$27) |k + 4| < 4$$



$$-8 < k < 0$$

Solve each equation.

$$28) 9|-5 + x| + 7 = 97$$
$$\{15, -5\}$$

$$29) |v + 3| = -3$$
$$\text{No solution.}$$