



Class/Homework

STUDY RULES
&

Worksheet

Product and
Quotient Rule

Math 9

Name _____ ID: 1

Product & Quotient Rules

Date _____ Period _____

Simplify. Your answer should contain only positive exponents.

1) $4p \cdot 6p^3 \cdot 5p^4$

$$120p^8$$

2) $6n^4 \cdot 6n^2 \cdot 3n^3$

$$108n^9$$

3) $2r^4 \cdot r^4$

$$2r^8$$

4) $3k^3 \cdot 7k^0$

$$21k^3$$

5) $5n^2 \cdot 6n^2$

$$30n^4$$

6) $8a^4 \cdot 8a^4$

$$64a^8$$

7) $\frac{6m^4}{8m^2}$

$$= \frac{6}{8} m^2$$

$$= \frac{3}{4} m^2$$

8) $\frac{6p^4}{7p^3}$

$$\frac{6}{7} p$$

9) $\frac{x^2}{2x}$

$$\frac{x}{2}$$

10) $\frac{5n}{2n}$

$$= \frac{5}{2} n^0$$

$$= \frac{5}{2} (1) = \frac{5}{2}$$

11) $\frac{4n^3}{6n^3}$

$$= \frac{4}{6} n^0$$

$$= \frac{2}{3} (1)$$

$$= \frac{2}{3}$$

12) $\frac{3x^3}{7x}$

$$= \frac{3}{7} x^2$$

13) $2x^0y^0 \cdot 8x^4y^2$

$$= 16x^4y^2$$

14) $5u^0v^4 \cdot 6vu^0 \cdot 7v^4$

$$\begin{aligned} &= 210u^0v^9 \\ &= 210 \downarrow (1) v^9 \\ &= 210v^9 \end{aligned}$$

15) $7x^4y^0 \cdot 4x^2y^2$

$$28x^4y^2$$

16) $6ab^2 \cdot 5a^3b^4$

$$= 30a^4b^6$$

17) $3x^4y^3 \cdot 8y$

$$= 24x^4y^4$$

18) $4x^3y^0 \cdot 5xy^4$

$$= 20x^4y^4$$

19) $\frac{5a^4b^4}{5b} = 1a^4b^3$

20) $\frac{2xy^3}{xy^3} = 2x^0y^0$
$$= 2 \downarrow (1) \downarrow (1)$$

$$= 2$$

21) $\frac{3ba^0}{a^0} = 3ba^0$
$$= 3b(1)$$

$$= 3b$$

22) $\frac{5ba^4}{6b^0} = \frac{5}{6} b^1 a^4$

23) $\frac{8m^3n^4}{3m^0} = \frac{8}{3} m^3 n^4$

24) $\frac{2u^3v^2}{3u^2} = \frac{2}{3} u^1 v^2$