

Name: \_\_\_\_\_

Score: \_\_\_\_\_

**Product Rule**

Algebra: D1

Use product rule and simplify. Write your answers in positive exponents.

1)  $6xy \cdot xy \cdot 4y^{-5}$

2)  $5pq \cdot qr \cdot pr$

3)  $(9mn)(4n^2)(3m^2)$

4)  $4ab^8 \cdot ab \cdot 9b^{-4}$

5)  $(5c^2d)(2d)(7cd^2)$

6)  $2klm \cdot 7lm \cdot 4km$

7)  $(7g^2h)(3gh^2)$

8)  $8xyz \cdot 7xy^2$

9)  $3rs^4 \cdot st \cdot 2t^{-4}$

10)  $2uv^6 \cdot 4u^{-8}v \cdot 5u^{-5}$

11)  $(9p^{-4}q)(4p)(3pq^{-5})$

12)  $7abc \cdot 4bc^2$

13)  $(6s^4t)(2st^6)$

14)  $2xy^4z \cdot 5xy^3z$

15)  $4pq^5 \cdot q^4r \cdot 7r^7$

16)  $7bc \cdot 3bc \cdot 6c^{-4}$

17)  $8qr \cdot rs \cdot qs^8$

18)  $(6yz)(2y^2)(4z^2)$

Name: \_\_\_\_\_

Answer key

Score: \_\_\_\_\_

Product Rule

Algebra: D1

$$1) \quad 6xy \cdot xy \cdot 4y^{-5}$$
$$= \frac{24x^2}{y^3}$$

$$2) \quad 5pq \cdot qr \cdot pr$$
$$= 5p^2q^2r^2$$

$$3) \quad (9mn)(4n^2)(3m^2)$$
$$= 108m^3n^3$$

$$4) \quad 4ab^8 \cdot ab \cdot 9b^{-4}$$
$$= 36a^2b^5$$

$$5) \quad (5c^2d)(2d)(7cd^2)$$
$$= 70c^3d^4$$

$$6) \quad 2klm \cdot 7lm \cdot 4km$$
$$= 56k^2l^2m^3$$

$$7) \quad (7g^2h)(3gh^2)$$
$$= 21g^3h^3$$

$$8) \quad 8xyz \cdot 7xy^2z$$
$$= 56x^2y^3z^2$$

$$9) \quad 3rs^4 \cdot st \cdot 2t^{-4}$$
$$= \frac{6rs^5}{t^3}$$

$$10) \quad 2uv^6 \cdot 4u^{-8}v \cdot 5u^{-5}$$
$$= \frac{40v^7}{u^{12}}$$

$$11) \quad (9p^{-4}q)(4p)(3pq^{-5})$$
$$= \frac{108}{p^2q^4}$$

$$12) \quad 7abc \cdot 4bc^2$$
$$= 28ab^2c^3$$

$$13) \quad (6s^4t)(2st^6)$$
$$= 12s^5t^7$$

$$14) \quad 2xy^4z \cdot 5xy^3z$$
$$= 10x^2y^7z^2$$

$$15) \quad 4pq^5 \cdot q^4r \cdot 7r^7$$
$$= 28pq^9r^8$$

$$16) \quad 7bc \cdot 3bc \cdot 6c^{-4}$$
$$= \frac{126b^2}{c^2}$$

$$17) \quad 8qr \cdot rs \cdot qs^8$$
$$= 8q^2r^2s^9$$

$$18) \quad (6yz)(2y^2)(4z^2)$$
$$= 48y^3z^3$$