

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

Teacher : \_\_\_\_\_ Date : \_\_\_\_\_

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## Powers of Products and Quotients

Simplify the exponents.

1)  $(9k^3)^4$

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

2)  $(3h^6r^5)^5$

8)  $(\frac{2^4}{2^2})^2$

3)  $(4g^2 \cdot 3g \cdot g^2)^3$

9)  $(\frac{9g^2}{7g})^3$

4)  $(s \cdot 2s^3)^3$

10)  $(\frac{s}{s^2})^2$

5)  $(3g^3 \cdot 4g)^2$

11)  $(\frac{w^3}{w^5})^2$

6)  $(9wb^2)^2$

12)  $(\frac{8g}{4g^2})^2$

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## Powers of Products and Quotients

Simplify the exponents.

1)  $(9k^3)^4$

$$6561k^{12}$$

2)  $(3h^6r^5)^5$

$$243h^{30}r^{25}$$

3)  $(4g^2 \cdot 3g \cdot g^2)^3$

$$1728g^{15}$$

4)  $(s \cdot 2s^3)^3$

$$8s^{12}$$

5)  $(3g^3 \cdot 4g)^2$

$$144g^8$$

6)  $(9wb^2)^2$

$$81w^2b^4$$

7)  $\left(\frac{4^2}{4}\right)^3$

$$4^3$$

8)  $\left(\frac{2^4}{2^2}\right)^2$

$$2^4$$

9)  $\left(\frac{9g^2}{7g}\right)^3$

$$\frac{729g^3}{343}$$

10)  $\left(\frac{s}{s^2}\right)^2$

$$\frac{1}{s^2}$$

11)  $\left(\frac{w^3}{w^5}\right)^2$

$$\frac{1}{w^4}$$

12)  $\left(\frac{8g}{4g^2}\right)^2$

$$\frac{4}{g^2}$$