

Name: _____

Score: _____

Power Rule

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

1) $(2s^8t^2)^7$

2) $(k^{-10}l^{-5})^{-4}$

3) $(3r^{-6}s^{-3})^{-2}$

4) $(3g^4l^{-3})^3$

5) $(3st^{-4})^2$

6) $(2t^{-3}u^{-9})^4$

7) $(v^2w^9)^8$

8) $(2q^{-1}r^{10})^4$

9) $(t^{10}u^3)^{-8}$

10) $(u^{-4}v^9)^8$

11) $(st^{10})^{10}$

12) $(2w^{-1}x)^8$

13) $(3c^{-10}d^9)^{-3}$

14) $(5x^2y^{-6})^{-2}$

15) $(2gh^{-2})^3$

16) $(9b^{-3}c^{-7})^{-2}$

17) $(v^{-4}w)^{-7}$

18) $(m^{10}n)^{-9}$

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Answers

$$1) \quad (2s^8t^2)^7 \\ = 128s^{56}t^{14}$$

$$2) \quad (k^{-10}l^{-5})^{-4} \\ = k^{40}l^{20}$$

$$3) \quad (3r^{-6}s^{-3})^{-2} \\ = \frac{r^{12}s^6}{9}$$

$$4) \quad (3g^4l^{-3})^3 \\ = \frac{27g^{12}}{l^9}$$

$$5) \quad (3st^{-4})^2 \\ = \frac{9s^2}{t^8}$$

$$6) \quad (2t^{-3}u^{-9})^4 \\ = \frac{16}{t^{12}u^{36}}$$

$$7) \quad (v^2w^9)^8 \\ = v^{16}w^{72}$$

$$8) \quad (2q^{-1}r^{10})^4 \\ = \frac{16r^{40}}{q^4}$$

$$9) \quad (t^{10}u^3)^{-8} \\ = \frac{1}{t^{80}u^{24}}$$

$$10) \quad (u^{-4}v^9)^8 \\ = \frac{v^{72}}{u^{32}}$$

$$11) \quad (st^{10})^{10} \\ = s^{10}t^{100}$$

$$12) \quad (2w^{-1}x)^8 \\ = \frac{256x^8}{w^8}$$

$$13) \quad (3c^{-10}d^9)^{-3} \\ = \frac{c^{30}}{27d^{27}}$$

$$14) \quad (5x^2y^{-6})^{-2} \\ = \frac{y^{12}}{25x^4}$$

$$15) \quad (2gh^{-2})^3 \\ = \frac{8g^3}{h^6}$$

$$16) \quad (9b^{-3}c^{-7})^{-2} \\ = \frac{b^6c^{14}}{81}$$

$$17) \quad (v^{-4}w)^{-7} \\ = \frac{v^{28}}{w^7}$$

$$18) \quad (m^{10}n)^{-9} \\ = \frac{1}{m^{90}n^9}$$