

Name: _____

Score: _____

Power Rule

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

1) $(s^{-9}t^{-10})^4$

2) $(6w^4x^5)^{-3}$

3) $(5u^{-5}v^4)^{-3}$

4) $(4q^{-2}r^{-6})^{-4}$

5) $(3v^{-2}w^{-3})^{-4}$

6) $(g^5h^{-7})^8$

7) $(2v^6w^{-4})^{-2}$

8) $(p^{-4}q^{-7})^{-10}$

9) $(q^{-7}r^2)^3$

10) $(r^{-8}s^5)^{-3}$

11) $(6x^{-9}y^6)^3$

12) $(y^{-5}z^{-4})^{-6}$

13) $(g^{-3}h^9)^{-9}$

14) $(2w^{10}x)^7$

15) $(b^8c)^6$

16) $(6y^8z)^{-3}$

17) $(5k^6l^6)^3$

18) $(2w^6x^{-9})^4$

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Answers

$$1) (s^{-9}t^{-10})^4 \\ = \frac{1}{s^{36}t^{40}}$$

$$2) (6w^4x^5)^{-3} \\ = \frac{1}{216w^{12}x^{15}}$$

$$3) (5u^{-5}v^4)^{-3} \\ = \frac{u^{15}}{125v^{12}}$$

$$4) (4q^{-2}r^{-6})^{-4} \\ = \frac{q^8r^{24}}{256}$$

$$5) (3v^{-2}w^{-3})^{-4} \\ = \frac{v^8w^{12}}{81}$$

$$6) (g^5h^{-7})^8 \\ = \frac{g^{40}}{h^{56}}$$

$$7) (2v^6w^{-4})^{-2} \\ = \frac{w^8}{4v^{12}}$$

$$8) (p^{-4}q^{-7})^{-10} \\ = p^{40}q^{70}$$

$$9) (q^{-7}r^2)^3 \\ = \frac{r^6}{q^{21}}$$

$$10) (r^{-8}s^5)^{-3} \\ = \frac{r^{24}}{s^{15}}$$

$$11) (6x^{-9}y^6)^3 \\ = \frac{216y^{18}}{x^{27}}$$

$$12) (y^{-5}z^{-4})^{-6} \\ = y^{30}z^{24}$$

$$13) (g^{-3}h^9)^{-9} \\ = \frac{g^{27}}{h^{81}}$$

$$14) (2w^{10}x)^7 \\ = 128w^{70}x^7$$

$$15) (b^8c)^6 \\ = b^{48}c^6$$

$$16) (6y^8z)^{-3} \\ = \frac{1}{216y^{24}z^3}$$

$$17) (5k^6l^6)^3 \\ = 125k^{18}l^{18}$$

$$18) (2w^6x^{-9})^4 \\ = \frac{16w^{24}}{x^{36}}$$