

Name: _____

Score: _____

Power Rule

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

1) $(6l^8m^7n^9)^2$

2) $(8t^{-6}u^3v^{-1})^{-1}$

3) $(4l^4m^{-2}n^{-9})^3$

4) $(2a^{-2}b^{-1}c^3)^{-7}$

5) $(6s^5t^8u^{-1})^{-2}$

6) $(k^6l^{-7}m^{-4})^{10}$

7) $(w^{-6}x^7y^{-10})^6$

8) $(6x^6y^4z^{-8})^{-3}$

9) $(2x^5y^3z^9)^{-7}$

10) $(w^{-1}x^7y^{-6})^{-4}$

11) $(l^{10}m^3n^{-8})^5$

12) $(3l^2m^{-10}n^{-4})^{-1}$

13) $(t^{-10}u^5v^4)^{-6}$

14) $(2u^{-7}v^{-9}w)^5$

15) $(5k^4l^{-8}m^3)^2$

16) $(u^8v^{-6}w^{-2})^{-6}$

17) $(8u^{-1}v^{-10}w^6)^2$

18) $(t^7u^{-3}v^{-4})^{-6}$

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Answers

$$1) (6l^8m^7n^9)^2 \\ = 36l^{16}m^{14}n^{18}$$

$$2) (8t^{-6}u^3v^{-1})^{-1} \\ = \frac{t^6v}{8u^3}$$

$$3) (4l^4m^{-2}n^{-9})^3 \\ = \frac{64l^{12}}{m^6n^{27}}$$

$$4) (2a^{-2}b^{-1}c^3)^{-7} \\ = \frac{a^{14}b^7}{128c^{21}}$$

$$5) (6s^5t^8u^{-1})^{-2} \\ = \frac{u^2}{36s^{10}t^{16}}$$

$$6) (k^6l^{-7}m^{-4})^{10} \\ = \frac{k^{60}}{l^{70}m^{40}}$$

$$7) (w^{-6}x^7y^{-10})^6 \\ = \frac{x^{42}}{w^{36}y^{60}}$$

$$8) (6x^6y^4z^{-8})^{-3} \\ = \frac{z^{24}}{216x^{18}y^{12}}$$

$$9) (2x^5y^3z^9)^{-7} \\ = \frac{1}{128x^{35}y^{21}z^{63}}$$

$$10) (w^{-1}x^7y^{-6})^{-4} \\ = \frac{w^4y^{24}}{x^{28}}$$

$$11) (l^{10}m^3n^{-8})^5 \\ = \frac{l^{50}m^{15}}{n^{40}}$$

$$12) (3l^2m^{-10}n^{-4})^{-1} \\ = \frac{m^{10}n^4}{3l^2}$$

$$13) (t^{-10}u^5v^4)^{-6} \\ = \frac{t^{60}}{u^{30}v^{24}}$$

$$14) (2u^{-7}v^{-9}w)^5 \\ = \frac{32w^5}{u^{35}v^{45}}$$

$$15) (5k^4l^{-8}m^3)^2 \\ = \frac{25k^8m^6}{l^{16}}$$

$$16) (u^8v^{-6}w^{-2})^{-6} \\ = \frac{v^{36}w^{12}}{u^{48}}$$

$$17) (8u^{-1}v^{-10}w^6)^2 \\ = \frac{64w^{12}}{u^2v^{20}}$$

$$18) (t^7u^{-3}v^{-4})^{-6} \\ = \frac{u^{18}v^{24}}{t^{42}}$$