Name: _____ Score:

Quotient Rule

Algebra: D2

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

1) $\frac{8^d 8^{-7} 8^{-5}}{8^2 8^{-d} 8^3}$

2) $\frac{7r^{-6}s^{-4}t^{-2}}{9r^4s^9t^{-8}}$

3) $\frac{2p^5q^{-8}}{6p^3q^6r^{-4}}$

4) $\frac{8r^{-5}s^{-4}}{6qr^6s^{-7}}$

5) $\frac{4a^3b^7}{7a^4b^9}$

6) $\frac{9b^{-6}c^3d^5}{2c^{-10}d^8}$

7) $\frac{6x^{-3}y^{-7}z^9}{3xy^4z^8}$

$\frac{-6q^{-3}r^4}{pq^5r^9}$

10) $\frac{7u^{-6}vw^{-3}}{u^{-8}v^{10}w^{-4}}$

$\frac{x^5y^{-10}}{x^8y^{-3}}$

13) $\frac{b^{-5}c^{-6}d^{-4}}{6b^{-10}c^{-2}d^7}$

$\frac{-z4^{-8}4^{-2}}{4^z4^34^5}$

16) $\frac{6w^8x^{-4}y^{-3}}{4w^{-5}x^{-3}y^{-8}}$

17) $\frac{5m^{-4}n^3}{6m^{10}n^{-8}}$

18) $\frac{7k^6l^{-8}m^5}{9k^4l^7m^{10}}$

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Name: _____ Answer key Score:

Quotient Rule

Algebra: D2

1) $\frac{8^d 8^{-7} 8^{-5}}{8^2 8^{-d} 8^3}$

$= 8^{2d-17}$

2) $\frac{7r^{-6}s^{-4}t^{-2}}{9r^4s^9t^{-8}}$

$= \frac{7t^6}{9r^{10}s^{13}}$

3) $\frac{2p^5q^{-8}}{6p^3q^6r^{-4}}$

$= \frac{p^2r^4}{3q^{14}}$

4) $\frac{8r^{-5}s^{-4}}{6qr^6s^{-7}}$

$= \frac{4s^3}{3qr^{11}}$

5) $\frac{4a^3b^7}{7a^4b^9}$

6) $\frac{9b^{-6}c^3d^5}{2c^{-10}d^8}$

$\frac{9c^{13}}{2b^6d^3}$

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7) $\frac{6x^{-3}y^{-7}z^9}{3xy^4z^8}$

$= \frac{2z}{x^4y^{11}}$

$\frac{-6q^{-3}r^4}{pq^5r^9}$

$\frac{1}{2p^7q^8r^5}$

10) $\frac{7u^{-6}vw^{-3}}{u^{-8}v^{10}w^{-4}}$

$= \frac{7u^2w}{v^9}$

$\frac{x^5y^{-10}}{x^8y^{-3}}$

$\frac{4}{x^3y^7}$

13) $\frac{b^{-5}c^{-6}d^{-4}}{6b^{-10}c^{-2}d^7}$

$= \frac{b^5}{6c^4d^{11}}$

$= \frac{}{4q^{14}rs^{14}}$

$\frac{-z4^{-8}4^{-2}}{4^z4^34^5}$

$= \frac{1}{4^{2z+18}}$

16) $\frac{6w^8x^{-4}y^{-3}}{4w^{-5}x^{-3}y^{-8}}$

$= \frac{3w^{13}y^5}{2x}$

17) $\frac{5m^{-4}n^3}{6m^{10}n^{-8}}$

$= \frac{5n^{11}}{6m^{14}}$

18) $\frac{7k^6l^{-8}m^5}{9k^4l^7m^{10}}$

$= \frac{7k^2}{9l^{15}m^5}$