

Name : _____

KEY

Score : _____

Teacher : _____

Date : _____

Exponents and Multiplication

Simplify. Your answer should contain only positive exponents.

1) $8 \cdot 8^{-2}$
 $\frac{1}{8^1}$

2) $r^5 n^{-3} \cdot 3r^{-4} n^6 \cdot 9n^4$
 $27r^2 n^7$

3) $\left(\frac{1}{n}\right)^6 \cdot \left(\frac{1}{n}\right)^4 \cdot \left(\frac{1}{n}\right)^2$
 $\left(\frac{1}{n}\right)^{12}$

4) $b^4 \cdot b^6 \cdot b^3$
 b^{13}

5) $9h \cdot 5h^2$
 $45h^3$

6) $5n \cdot 4n^{-2}$
 $\frac{20}{n}$

7) $7d^4 \cdot 2d^6 c^5$
 $14d^{10} c^5$

8) $\left(\frac{1}{3}\right)^3 \cdot \left(\frac{1}{3}\right)^2 \cdot \left(\frac{1}{3}\right)^4$
 $\left(\frac{1}{3}\right)^9$

9) $4y^6 \cdot 5y^{-2} \cdot 7y^{-4}$
140

10) $4h^6 \cdot 6h^{-2} w^4$
 $24h^4 w^4$

11) $9dh^5 \cdot 2d^4 h^2$
 $18d^5 h^7$

12) $6^{-3} \cdot 6^6$
 6^3

13) $g^4 c^6 \cdot 2g^3 c^5 \cdot 8gc^3$
 $16g^8 c^{14}$

14) $8z^{-6} r^4 \cdot 5zr^{-3}$
 $40 \frac{r}{z^5}$



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Exponents and Division

Simplify. Your answer should contain only positive exponents.

$$1) \frac{7g^2}{9g^2}$$
$$\frac{7}{9}$$

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

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

$$8) \frac{9g^3}{2g}$$
$$\frac{9g^2}{2}$$

$$3) \frac{ac}{4d^2c^2}$$
$$\frac{1}{4d^2c}$$

$$9) \frac{r^4}{r^6}$$
$$r^{-2}$$

$$4) \frac{d}{d^6}$$
$$d^{-5}$$

$$10) \frac{5z^4}{6z}$$
$$\frac{5z^3}{6}$$

$$5) \frac{7zk^3}{3z^2k^2}$$
$$\frac{7k}{3z}$$

$$11) \frac{k}{k^3}$$
$$\frac{1}{k^2}$$

$$6) \frac{8r^2k^2}{4rk^3}$$
$$\frac{2r}{k}$$

$$12) \frac{3^2}{3^4}$$
$$\frac{1}{3^2}$$

