



Dividing Powers with the Same Base **Answers**

Bronze

Write each of the following as a single power.

1. $2^{10} \div 2^5$

$$2^{10-5}$$

$$2^5$$

5. $m^6 \div m^2$

$$m^{6-2}$$

$$m^4$$

9. $x^{12} \div x^4$

$$x^{12-4}$$

$$x^8$$

2. $8^6 \div 8$

$$8^{6-1}$$

$$8^5$$

6. $4^{10} \div 4^9$

$$4^{10-9}$$

$$4^1 \text{ (or 4)}$$

10. $\frac{n^8}{n}$

$$n^{8-1}$$

$$n^7$$

3. $\frac{d^6}{d^2}$

$$d^{6-2}$$

$$d^4$$

7. $\frac{t^{25}}{t^4}$

$$t^{25-4}$$

$$t^{21}$$

4. $\frac{5^9}{5^4}$

$$5^{9-4}$$

$$5^5$$

8. $\frac{b^3}{b}$

$$b^{3-1}$$

$$b^2$$

**Silver**

Write each of the following as a single power.

1. $5a^4 \div a^2$

$5a^{4-2}$

$5a^2$

5. $\frac{30n^5}{2n^3}$

$15n^{5-3}$

$15n^2$

9. $72k^{11} \div 8k^9$

$9k^{11-9}$

$9k^2$

2. $7m^6 \div m$

$7m^{6-1}$

$7m^5$

6. $\frac{15y^7}{3y^4}$

$5y^{7-4}$

$5y^3$

10. $\frac{35y^7}{7y^2}$

$5y^{7-2}$

$5y^5$

3. $10x^5 \div 2x^3$

$5x^{5-3}$

$5x^2$

7. $\frac{20d^4}{2d}$

$10d^{4-1}$

$10d^3$

4. $\frac{2n^5}{2n}$

n^{5-1}

n^4

8. $25g^3 \div 5g$

$5g^{3-1}$

$5g^2$

Gold

Write each of the following as a single power.

1. $5^8 \div 5^{-3}$

$$5^{8 - (-3)}$$

$$5^{11}$$

4. $\frac{x^{10}}{x^{-5}}$

$$x^{10 - (-5)}$$

$$x^{15}$$

7. $18x^{-1} \div 3x$

$$6x^{-1 - 1}$$

$$6x^{-2}$$

2. $3^4 \div 3^{-2}$

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

$$3^6$$

5. $\frac{45y^{10}}{5y^{-2}}$

$$9y^{10 - (-2)}$$

$$9y^{12}$$

8. $\frac{55b^{-11}}{5b}$

$$11b^{-11 - 1}$$

$$11b^{-12}$$

3. $2^{-2} \div 2^{-6}$

$$2^{-2 - (-6)}$$

$$2^4$$

6. $52a^{-4} \div 13a^9$

$$4a^{-4 - 9}$$

$$4a^{-13}$$

Challenge

Simplify each of the following:

1. $\frac{a^2 b^2}{b^3}$

$$a^2 b^{2-3}$$

$$a^2 b^{-1}$$

2. $\frac{12a^2 b^{-4}}{3a^{-3}}$

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

$$4a^{2+3} b^{-4}$$

$$4a^5 b^{-4}$$