



## Apply exponent laws to simplify expressions

**1**

Find the answer when these terms are divided

$$\frac{y^3}{y^1}$$

|            |            |            |
|------------|------------|------------|
| A<br>1     | B<br>$y^3$ | C<br>$y^5$ |
| D<br>$y^0$ | E<br>$y^2$ | F<br>$y$   |

**2**

Find the answer when these terms are multiplied

$$(y) \cdot \left(\frac{1}{y}\right)$$

|               |               |            |
|---------------|---------------|------------|
| A<br>$y^{-1}$ | B<br>$y^0$    | C<br>$y^9$ |
| D<br>$y^8$    | E<br>$y^{-2}$ | F<br>$y^3$ |

**3**

Find the answer when these terms are multiplied

$$(c^1) \cdot (c^{-4})$$

|                |               |               |
|----------------|---------------|---------------|
| A<br>$c^{-10}$ | B<br>$c$      | C<br>$c^{-9}$ |
| D<br>$c^2$     | E<br>$c^{-3}$ | F<br>$c^{-8}$ |

**4**

Find the answer when these terms are divided

$$\frac{n^{-5}}{n^4}$$

|               |               |               |
|---------------|---------------|---------------|
| A<br>$n^{-4}$ | B<br>$n^{-9}$ | C<br>$n^{-7}$ |
| D<br>$n^{-8}$ | E<br>$n^{-2}$ | F<br>$n^7$    |

**5**

Find the answer when these terms are divided

$$\frac{m^{-4}}{m^{-5}}$$

|                      |                    |          |
|----------------------|--------------------|----------|
| A<br>$m^4$           | B<br>$\frac{1}{m}$ | C<br>1   |
| D<br>$\frac{1}{m^2}$ | E<br>$m^2$         | F<br>$m$ |

**6**

Find the answer when these terms are divided

$$\frac{p^{-12}}{p^{-7}}$$

|               |               |               |
|---------------|---------------|---------------|
| A<br>$p^{-2}$ | B<br>$p^9$    | C<br>$p^{-5}$ |
| D<br>$p^{-4}$ | E<br>$p^{-3}$ | F<br>$p$      |

**7**

Find the answer when these terms are divided

$$\frac{n^{-4}}{n^3}$$

|                         |                      |                      |
|-------------------------|----------------------|----------------------|
| A<br>$\frac{1}{n^7}$    | B<br>$\frac{1}{n^5}$ | C<br>$\frac{1}{n^8}$ |
| D<br>$\frac{1}{n^{10}}$ | E<br>$\frac{1}{n^6}$ | F<br>$\frac{1}{n^9}$ |

**8**

Find the answer when this term is raised to its exponent

$$(p^{-5})^4$$

|                |               |                |
|----------------|---------------|----------------|
| A<br>$p^{-16}$ | B<br>$p^{-1}$ | C<br>$p^{-23}$ |
| D<br>$p^{-20}$ | E<br>$p^{-2}$ |                |

**Apply exponent laws to simplify expressions****9**

Find the answer when these terms are multiplied

$$\frac{1}{15} \cdot \frac{1}{15} \cdot \frac{1}{15} \cdot \frac{1}{15} \cdot \frac{1}{15}$$

A

$15^{-5}$

B

$15^{-4}$

C

$15^{-500}$

**10**

Convert the fractional exponent to a radical

$5^{-\frac{1}{3}}$

A

$\frac{1}{\sqrt[3]{8}}$

B

$\frac{1}{4\sqrt[3]{3}}$

C

$\sqrt[3]{4}$

D

$\frac{1}{\sqrt[3]{5}}$

E

$\frac{1}{\sqrt[3]{4}}$

**11**

What integer does this radical expression simplify to?

$\sqrt[3]{4^3}$

A

13

B

3

C

8

D

4

E

7

F

2

**12**

What does this expression simplify to?

$$\frac{2^{2029} + 2^{2024}}{2^{2024}}$$

A

27

B

15

C

51

D

33

E

30

F

21

**13**

Simplify using the laws of exponents.

$$\frac{xy^{-3}z^{-3}}{x^{\frac{1}{2}}y^{-\frac{1}{2}}z}$$

A

$x^{\frac{3}{2}}y^{-\frac{5}{2}}z^{-4}$

B

$x^{\frac{3}{2}}y^{-\frac{7}{2}}z^{-2}$

C

$x^{\frac{1}{2}}y^{-\frac{5}{2}}z^{-4}$

D

$x^{-\frac{1}{2}}y^{-\frac{5}{2}}z^{-4}$

**14**

Simplify using the laws of exponents.

$$\left(\frac{x^{-1}y}{x^{-1}y^{-1}}\right)^{-1} \cdot \sqrt{\frac{x^{-1}y^{-1}}{x^{-1}y^2}}$$

A

$xy^{-\frac{7}{2}}$

B

$y^{-1}$

C

$x^{-1}y^{-\frac{7}{2}}$

D

$y^{-\frac{7}{2}}$

**15**

Simplify using the laws of exponents.

$$\sqrt[3]{xy^{-2}} \cdot x^{-1}y^{-\frac{1}{2}}$$

A

$x^{\frac{1}{3}}y^{-\frac{7}{6}}$

B

$x^{\frac{2}{3}}y^{-\frac{7}{6}}$

C

$x^{\frac{4}{3}}y^{-\frac{1}{6}}$

D

$x^{-\frac{2}{3}}y^{-\frac{7}{6}}$

**16**

Simplify using the laws of exponents.

$$(x^{-1}y^{-1})^{-1}$$

A

$x^2y$

B

$xy$

C

$x^{-1}y$

D

$x^{-2}y^{-2}$