

C7L2 Notes

Multiplying Powers With The Same Base

Rewrite each expression using each base only once. Write answers with positive exponents.

1. $8^5 \cdot 8^6$

$$8^{11}$$

2. $(-3)^4 \cdot (-3)^2 \cdot (-3)^7$

$$(-3)^{13}$$

3. $7^5 \cdot 7^4 \cdot 7^{-3}$

$$7^{-2}$$

$$\frac{1}{7^2}$$

4. $(-4)^6 \cdot (-4)^{-2} \cdot (-4)^5$

$$(-4)^9$$

Simplify. Write answers with positive exponents.

5. $n^7 n^3$

$$n^{10}$$

6. $4c^3 \cdot c^9$

$$4c^{12}$$

7. $3m^{-5} \cdot 2m^1$

$$6m^{-4}$$

$$\frac{6}{m^4}$$

8. $(a^4 b^{-6})(ab^4)$

$$a^5 b^{-2}$$

$$\frac{a^5}{b^2}$$

9. $(2xy^3)(3yz^6)(4x^{-6}z^{-2})$

$$24x^{-5}y^4z^4$$

$$\frac{24y^4z^4}{x^5}$$

10. $-x^3 \cdot 5y^7 \cdot 8y^{-9} \cdot 4x$

$$-160x^4y^{-2}$$

$$\frac{-160x^4}{y^2}$$

Complete each equation.

11. $4^3 \cdot 4^{\square} = 4^9$

$$3 + \square = 9$$

$$\square = 6$$

12. $n^{\square} \cdot n^{-2} = n^{-7}$

$$\square + -2 = -7$$

$$\square = -5$$

13. $m^{\square} \cdot m^{\frac{1}{2}} = m^1$

$$\square + \frac{1}{2} = 1$$

$$\square = \frac{1}{2}$$

14. $x^{\square} \cdot x^5 = 1$

$$x^{\square} \cdot x^5 = x^0$$

$$\square + 5 = 0$$

$$\square = -5$$

15. $a^5 b^6 \cdot a^{\square} b^{\square} = a^{-9} b^{10}$

EXPONENTS FOR a:

$$5 + \square = -9$$

$$\square = -14$$

EXPONENTS FOR b:

$$6 + \square = 10$$

$$\square = 4$$

16. $m^7 n^{\square} \cdot m^{\square} = n^3 m^0$

$$m^7 n^{\square} \cdot m^{\square} = n^3 m^0$$

EXPONENTS FOR m:

$$7 + \square = 0$$

$$\square = -7$$

EXPONENTS FOR n:

$$\square = 3$$