



Practice exercise: Exponents

Simplify.

1. $(-5x^5y^5)^2(-xy^2)^2$

a. $-25x^9y^{11}$

b. $25x^9y^{12}$

c. $25x^{12}y^6$

d. $-25x^{12}y^{14}$

e. $25x^{12}y^{14}$

2. $(-3xy)(7xy)$

a. $-20xy^2$

b. $-21x^2y$

c. $-20xy$

d. $-21x^2y^2$

3. $\left(\frac{6y^5}{5k}\right)\left(\frac{20k}{18y}\right)$

a. $\frac{108y^4}{100}$

b. $\frac{4y^6}{3k^2}$

c. $\frac{3y^4}{4}$

d. $\frac{4y^4}{3}$

4. $\frac{3y^{14}r^{14}}{y^4r^5}$

- $3y^{10}r^9$
- $3y^{11}r^{10}$
- $3y^{12}r^9$
- $3y^{10}r^{10}$

5. $\frac{40q^4w^{12}}{90w^2q^6}$

- $\frac{4w^{10}}{9q^2}$
- $\frac{9w^{10}}{4q^2}$
- $\frac{4w^{10}}{9q^{12}}$
- $\frac{4w^{14}}{9q^{10}}$

6. $\frac{6x^5y^6}{3xy^2}$

- $3x^5y^4$
- $2x^4y^4$
- $2x^5y^4$
- $3x^4y^4$
- $2xy^4$

7. $(6z^4)(12z^3)$

a. $72 \cdot z^7$

b. $504 \cdot z$

c. $72 \cdot z^{12}$

d. $72 \cdot z^1$

8. $\left(\frac{7}{8}x^5y^4\right)(-x^5y)$

a. $-\frac{7}{8}x^{10}y^5$

b. $-\frac{15}{8}x^{25}y^5$

c. $-\frac{7}{8}x^{10}y^4$

d. $-\frac{15}{8}x^{10}y^4$

e. $-\frac{7}{8}x^{25}y^4$

9. $\left(5yx^{\frac{1}{4}}\right)^4$

a. $625xy^4$

b. $5xy^4$

c. $625xy^{\frac{1}{4}}$

d. $625yx^4$

10. $-(ab)^3$

a. $125a^4b^4$

b. $15a^3b^3$

c. $-125a^3b^3$

d. $-125a^4b^4$

e. $-15a^4b^4$

11. $(-3ab^5)^2$

- a. $9a^2b^7$
- b. $9a^2b^{10}$
- c. $-9a^2b^{10}$
- d. $9a^3b^7$
- e. $-9a^2b^7$

12. $(-4a^3b^6)^2$

- a. $16a^5b^8$
- b. $16a^6b^6$
- c. $16a^6b^{12}$
- d. $16a^3b^{12}$

13. $(0.9y^4)(0.2y^5)$

- a. $1.8y^8$
- b. $0.18y^8$
- c. $0.18y^9$
- d. $0.018y^9$

14. $\left(-\frac{1}{4}\right)^3$

- a. $\frac{1}{-64}$
- b. -64
- c. $\frac{1}{64}$

15. $5^4 + 2^3 - 5^2$

- a. 618
- b. 593
- c. 632
- d. 608

Answer Key

Practice exercise: Exponents

1. E
2. D
3. D
4. A
5. A
6. B
7. A
8. A
9. A
10. C
11. B
12. C
13. C
14. A
15. D