

Palomar College Math Placement Test Study Guide Intermediate Algebra

Topic 6: Exponents

1. Write in scientific notation: 0.0000000456
2. Write in decimal notation: 3.21×10^{12}
3. Simplify: $(-5xy^2)^3$
4. Simplify: $(2x^3y^4)(5x^6y^7)$
5. Simplify and write your answer with positive exponents:
$$\frac{-8xy^2z^5}{4x^4yz^2}$$
6. Simplify and write your answer in scientific notation:
$$\frac{(3.4 \times 10^8)(4 \times 10^{-6})}{(2 \times 10^{-8})}$$
7. Simplify and write your answer with positive exponents:
$$(2a^2b)(-3a^{-2}b^3)^2$$
8. Simplify and write your answer with positive exponents:
$$\frac{18r^3s^{-5}t^6}{-4r^{-5}st^6}$$
9. Simplify: $16^{\frac{-3}{4}}$
10. Simplify: $(a^6b^3c^9)^{\frac{2}{3}}$
11. Rewrite using radical notation: $3x^{\frac{1}{2}}$
12. Rewrite as a single radical: $x^{\frac{2}{3}}y^{\frac{5}{6}}$

Answers:

1. 4.56×10^{-8}
2. 3,210,000,000,000
3. $-125x^3y^6$
4. $10x^9y^{11}$
5. $-\frac{2yz^3}{x^3}$
6. 6.8×10^{10}
7. $-6b^7$
8. $-\frac{9r^8}{2s^6}$
9. $\frac{1}{8}$
10. $a^4b^2c^6$
11. $3\sqrt{x}$
12. $\sqrt[6]{x^4y^5}$