

Palomar College Math Placement Test Study Guide Beginning Algebra

Topic 9: Square Roots

Assume all variables represent non-negative numbers.

1. Simplify: $\sqrt{60}\sqrt{5}$
2. Simplify: $\sqrt{8x^{20}y^5z^9}$
3. Simplify: $(2 + \sqrt{3})^2$
4. Simplify: $\frac{\sqrt{75x^6y^4}}{\sqrt{12x^2y^{10}}}$
5. Simplify: $\sqrt{20ab^3}\sqrt{4a^5b^2}$
6. Rationalize the denominator: $\frac{2}{\sqrt{3}}$
7. Simplify: $4x\sqrt{18x^2} - 5\sqrt{32x^4} + 2\sqrt{162}$
8. Solve: $\sqrt{2x-7} + 8 = 11$
9. Find the length of the hypotenuse of a right triangle whose legs are 5 inches and 10 inches.

Answers:

1. $10\sqrt{3}$
2. $2x^{10}y^2z^4\sqrt{yz}$
3. $7 + 4\sqrt{3}$
4. $\frac{5x^2}{2y^3}$
5. $4a^3b^2\sqrt{5b}$
6. $\frac{2\sqrt{3}}{3}$
7. $-8x^2\sqrt{2} + 18\sqrt{2}$
8. $x = 8$
9. The hypotenuse is $5\sqrt{5}$ inches.