

Multiply and simplify.

1) $\sqrt{14m^5} \sqrt{7m^{15}}$

1) _____

Simplify by taking the roots of the numerator and the denominator. Assume all variables represent positive numbers.

2) $\sqrt{\frac{54a^2b}{c^2}}$

2) _____

Divide and, if possible, simplify. Assume all variables represent positive numbers.

3)

$$\frac{\sqrt{28xy^3}}{\sqrt{4x}}$$

3) _____

4)

$$\frac{\sqrt{360mn}}{3\sqrt{5}}$$

4) _____

Rationalize the denominator. Assume all variables represent positive numbers.

5) $\sqrt{\frac{147x^3}{y^5}}$

5) _____

Add or subtract. Simplify by combining like radical terms, if possible. Assume all variables and radicands represent positive real numbers.

6) $\sqrt{5a} + 7\sqrt{45a} + 7\sqrt{20a}$

6) _____

Solve.

7) $\sqrt{3q - 2} = 2$

7) _____

Solve the problem. Where appropriate, round to three places.

8) A car dealer advertised a big sale by stretching a string of banners from the top of the building to the edge of the driveway. If the building is 16 m high and the driveway is 31 m from the building, how long is the string of banners?

8) _____

Solve.

9) $20x^2 + 37x + 15 = 0$

9) _____

10) $5x(x - 4) - 17 = 4x(x - 1)$

10) _____