

Algebra 1 Bellwork Thursday, May 19, 2016

1. Simplify each square root.

a) $\sqrt{80}$

b) $\sqrt{126}$

c) $\sqrt{567}$

d) $\sqrt{676}$

2. The given equation gives a company's profit as a function of the price they charge for each radio.

$$P(r) = -35r^2 + 2030r + 84$$

a) Find the price the company should charge for each radio in order to maximize their profit.

b) Find the company's maximum profit.

3. The area of a square is 361in^2 . Find the perimeter of the square.

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Answers

1. Simplify each square root.

a) $\sqrt{80}$
 $= \sqrt{16 \cdot 5}$
 $= 4\sqrt{5}$

b) $\sqrt{126}$
 $= \sqrt{9 \cdot 14}$
 $= 3\sqrt{14}$

c) $\sqrt{567}$
 $= \sqrt{81 \cdot 7}$
 $= 9\sqrt{7}$

d) $\sqrt{676}$
 $= 26$

2. The given equation gives a company's profit as a function of the price they charge for each radio.

$$P(r) = -35r^2 + 2030r + 84$$

a) Find the price the company should charge for each radio in order to maximize their profit.

$\$29$ per radio

Vertex (r, P)
 r → price of a radio
 P → profit

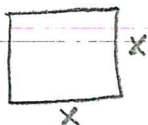
$$-\frac{b}{2a} = \frac{-2030}{2(-35)} = \$29$$

b) Find the company's maximum profit.

$\$29,519$ in profit

$(\$29, \$29,519)$

3. The area of a square is 361in^2 . Find the perimeter of the square.



$$A = x \cdot x$$

$$A = x^2$$

$$\sqrt{361} = \sqrt{x^2}$$

$$x = 19\text{in}$$

$$\text{Perimeter} = 4x$$

$$= 4(19) = 76\text{in}$$