Bellwork Hon Alg 2 Monday, November 21, 2016

1. The owner of a bike shop predicts that he will sell 280 bicycles for $ 360 . He also predicted that for each increase in the price of $ 10, he will sell 5 bikes less. At what price should the owner sell bikes in order to maximize the stores profit?

Fill in the blanks for each problem.

2. $x^2 - 6x$_____ = (_____)^2

3. $x^2 + 11x$_____ = (_____)^2

4. $x^2 -$ _____ $+ 169 =$ (_____)^2

5. $x^2 +$ _____ $+ 441 =$ (_____)^2

Bellwork Hon Alg 2 Monday, November 21, 2016 Answers

1. The owner of a bike shop predicts that he will sell 280 bicycles for $ 360 . He also predicted that for each increase in the price of $ 10, he will sell 5 bikes less. At what price should the owner sell bikes in order to maximize the stores profit?

x = # $10 increases

profit = (# Bikes)(\$ per bike)

$P = (280 - 5x)(360 + 10x)$

x-int: $\frac{-280}{-5} = 56$ x-int: $\frac{-360}{10} = -36$

LOS: $x = \frac{56 + -36}{2} = 10$

10 $10 increases

Final price = $460

If you expand this product: $-50x^2 + 1000x + 100,80$

LOS: $x = \frac{-1000}{2(-50)} = 10$

Fill in the blanks for each problem.

2. $x^2 - 6x$ +9 = (X - 3)^2

3. $x^2 + 11x$ + $\frac{121}{4}$ = (X + $\frac{11}{2}$)^2

4. $x^2 -$ 26x $+ 169 =$ (X - 13)^2

5. $x^2 +$ 42X $+ 441 =$ (X + 21)^2