

1. in 2009, ABC Company made \$2M of net profit and spent \$100,000 on advertisement. In 2010, it made \$2.5M of net profit and spent \$150,000 on advertisement. Based on this information, if ABC's advertisement expenditure increases by \$20,000 in 2011, how much do you expect its net profit to increase? Explain why the ratios of net profit to advertisement expenditure in 2009 and 2010 are different from the slope of the net profit advertisement relationship.

Year ___ Profit (P) ___ Advertisement expenditures

2009__ \$2M _____ \$100,000

2010__ \$2.5M _____ \$150,000

2011__ P₂₀₁₁ _____ \$150,000+\$20,000

Solution.

$$2009: 2000000 \div 100000 = 20$$

$$2010: 2500000 \div 150000 \approx 16.7$$

$$20 - 16.7 = 3.3$$

$$3.3 \cdot x = 150000 - 100000 = 50000$$

$$x = 50000 \div 3.3 = 15151.5 \text{ Coefficient}$$

$$k \cdot x = 20000 \div 15151.5$$

$$k = 1.32$$

$$16.7 + 1.32 \approx 18$$

$$P_{2011} \div 170000 = 18$$

$$P_{2011} = 3060000$$

Answer.

$$P_{2011} = 3060000.$$