# 4 Review Questions Using Metrics and Math in MKT 210

Ted Mitchell

The key to solving many of these problems is to remember the basic definitions involved.

1. The NS Wagon Company earns $330,000 in profits on sales of $6,000,000. It has total assets of $3,000,000 and net worth of $1,750,000. Calculate its net profit margin (i.e., return on sales or net profit percentage)

a) 5.5% *
b) 18.9%
c) 29.2%
d) 11%
e) 50%

Answer

The definition of return on sales (ROS) or net profit margin is the ratio of net profit divided by sales

net profit ÷ sales = net profit margin (aka return on sales)

$330,000 / $6,000,000 = 0.055 = 5.5%

It is important because it is used in cost based pricing equations

2) A boy purchases a wagon for $6 and sells it for $10. What is his markup on his selling price?

a) 166.67%
b) 66.67%
c) 60%
d) 40% *
e) 20%

Answer:

Remember the definition of the dollar markup on selling price

$Mp = P-V/P$

Where Mp = markup on Price, V = variable coat. P = selling price and the dollar markup is the price minus the cost (P-V)

$Mp = (10-6)/10 = 40\%$

3) You have forecasted the sales volume for the coming period to be 300,000 pairs of shoes, and your cumulative production up to and including the last period is 1,100,000 pairs. You know the learning curve for your business is $V = 7500\ Q^{-0.415}$ where
V = variable cost per pair
Q = cumulative quantity
What is the estimate variable cost of making a pair of shoes if the sales forecast is reached?
A) $21.11*
B) $11.21
C) $26.00
D) $14.41
E) $39.99
Answer
$V = 7500(1{,}400{,}000^{-0.415}) = 21.11$

4) A firm makes shoes for a cost of $40 pair and sells them for a price that earns them a normal profit using an 80% markup on price. What price does the firm sell the shoes for?
A) $72
B) $120
C) $200*
D) $320
E) $720
Answer:
Start by remembering the definition of dollar markup on price, which is better known as the markup (Mp)
Mp = P-V/P
You know the variable cost is V =$40 per pair and the markup is Mp = 0.80
P-V = MpP
P-40 = 0.8P
P- 0.8P = 40
0.2P = 40
P = 40/. 2 = 200
Some people simply memorize the equation
P = V/(1-Mp)
This is the same question as:
A boy bought a wagon for $40 and sold it to his friend for a price that earned him a profit representing an 80% markup on price. What price did he sell the wagon for?