

BUS101 – MTA Sample Questions with Answers

Question 1: Answer the following questions and show your steps of calculation:

- a) Round \$95.487 to the nearest cent. \$95.49
- b) Round 517.945 to the nearest hundredth. 517.95
- c) Convert $\frac{33}{7}$ to a mixed number. $4\frac{5}{7}$
- d) Convert $3\frac{2}{9}$ to an improper fraction. $\frac{29}{9}$
- e) Calculate by writing the answer as a simplified fraction:
- $3\frac{2}{3} \times 2\frac{1}{5} = \frac{11}{3} \times \frac{11}{5} = \frac{121}{15} = 8\frac{1}{15}$
 - $1\frac{3}{4} \div 3\frac{1}{5} = \frac{7}{4} \times \frac{5}{16} = \frac{35}{64}$
- f) Convert 7.45 to a decimal fraction. Do not reduce to the lowest term.
- $7\frac{45}{100}$
- g) Convert $2\frac{11}{4}$ to a decimal. $\frac{19}{4} = 4.75$
- h) Solve for the Unknown A: $3(2A - 1) + (A + 4) = A + 4$
- $6A - 3 + A + 4 = A + 4$
- $7A + 1 = A + 4$ Add -A to both side of equation
- $6A + 1 = 4$ Add -1 to both side of equation
- $6A = 3$ Divide both side of equation over 6
- $A = 3/6 = 1/2$
- i) Convert $4\frac{2}{3}\%$ to a fraction and reduce to the lowest terms:

$$14\frac{2}{3}\% = 14\frac{2}{3} \times \frac{1}{100} = \frac{14}{300} = \frac{7}{150}$$

Question 2:

A trip between two cities will take you 5 and $\frac{1}{4}$ hours. Assume you have traveled $\frac{10}{21}$ of the way. How much longer will the trip take?

$$2\frac{1}{4} \times \frac{11}{21} = \frac{11}{4} = 2\frac{3}{4} \text{ hours}$$

Question 3:

Ahmed and Ali are selling Sports Magazines to raise money for the gym at their school. Ahmed received the prize for selling the most magazines in the school. Ahmed sold 18 times the number of magazines sold by Ali. Together they sold 228 magazines. How many did each one of them sell?

Magazines sold by Ali = M

Magazines sold by Ahmed = 18M

Total magazines sold = M + 18M = 228

$$19M = 228$$

$$M = 12$$

Ali sold 12 magazines

Ahmed sold $18 \times 12 = 216$

Check $12 + 12 \times 18 = 228$

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Question 4:

The increase in the price of sugar caused the M&M/Mars company to decrease the weight of each 1-pound (16 ounces) bag of M&M's® to 14 ounces. What is the rate of percent decrease?

$$\begin{aligned}\text{The rate of percent decrease} &= (\text{old weight} - \text{new weight}) / \text{old weight} \times 100 \\ &= (16-14)/16 \times 100 = 12.5 \%\end{aligned}$$

Question 5:

The amount of foreign currency in the federal bank was \$2.25 billions last year. This year the reserve amount to be \$3.6 billions. What is the rate of percent increase?

$$\begin{aligned}\text{The rate of percent increase} &= (\text{new value} - \text{old value} / \text{old value} \times 100 \\ &= (3.6-2.25)/2.25 \times 100 = 60 \%\end{aligned}$$

Question 6:

The new price of a flat screen television decreased by 12% is \$1100. What was the original price?

$$\begin{aligned}\text{The original price} &= \text{new price} / (1-\text{percent of decrease}) \\ &= 1100 / (1-0.12) = 1100 / 0.88 = \$1250\end{aligned}$$

Question 7:

The registration fees this year is \$82.60 and that is after an increase of 18%. What was the registration fee last year?

$$\begin{aligned}\text{The registration fee last year} &= \text{The registration fee this year} / (1+\text{percent of increase}) \\ &= 82.60 / (1+0.18) = 82.60 / 1.18 = \$70\end{aligned}$$

Question 8:

The price of an equipment is \$16,000. With a chain discount of 10/15/10, what is the net price?

$$\begin{aligned}\text{By using complement method:} & \quad \text{discount rate} = 0.9 \times 0.85 \times 0.9 = 0.6885 \\ \text{Net price} &= 0.6885 \times 16000 = \$11016\end{aligned}$$

Question 9:

A buyer owes \$500. The terms were 2/10, n/30. Within 10 days the buyer sent in a payment of \$100. How much is the new balance?

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$$\text{Amount} = 100 / 0.98 = 102.04$$

$$\text{The new balance} = 500 - 102.04 = \$ 397.96$$

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Question 10:

Complete the following table (**Show your work**):

Gross Amount of Invoice (freight charge already included)	Freight Charge	Date of Invoice	Terms of invoice	Date of Payment	Cash Discount	Net Amount Paid
\$8000	\$100	10 th of May	2/15 , n/30	21 st of May	\$158	\$ 7842

Find the cash Discount.

Find the Net Amount Paid

$$\text{Cash Discount} = 0.02 \times 7900 = \$ 158$$

$$\text{Net Amount Paid} = 0.98 \times 7900 + 100 = \$ 7842$$

Question 11:

A retail shop received an invoice for \$2200 dated May 21, terms 3/10 EOM.

- What is the last date of the discount and credit periods?
-

Last date of the discount is June 10

Last date of credit periods June 30

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If paid on June 7, how much the retail shop should pay? **Discount**

$$0.03 \times 2200 = \$ 66$$

$$\text{Net Amount Paid} = 2200 - 66 = \$ 2134$$

Question 12:

A \$1600 invoice dated May 9, received goods July 8; terms 3/10, n/30 ROG; paid on July 16.

a)

Find the cash discount **Discount**

$$0.03 \times 1600 = \$ 48$$

b)

Find the Net Amount Paid

$$\text{Net Amount Paid} = 1600 - 48 = \$ 1552$$

Question 13:

Alvin's vegetable stand grew 400 pounds of tomatoes. He expects 8% of the tomatoes to become spoiled and not salable. The tomatoes cost Alvin \$.14 per pound and he wants a 65% markup on cost. Find the selling price per pound (Round your answers to the nearest hundredth)

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$$\text{TC (Total Cost)} = 400 \text{ lb.} \times \$0.14 = \$56.00$$

$$\text{TS (Total Sales)} = \text{TC} + \text{TM (Total Markup)}$$

$$\text{TS} = \$56 + .65(\$56)$$

$$\text{TS} = \$92.40$$

$$\text{Spoiled tomatoes} = 400 \text{ lbs} \times .08 = 32 \text{ lbs}$$

$$\text{Salable tomatoes} = 400 \text{ lbs} - 32 = 368 \text{ lbs}$$

$$\text{selling price per pound} = \frac{\$92.40}{368 \text{ lbs}} = \$0.25$$

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Question 14:

A retail shop sells a certain type of kids toy that costs \$36. To make the desired profit, the store needs a 60% markup on selling price.

- a) What is the selling price?

$$S = C + M$$

$$S = 36 + 0.6S$$

$$0.4S = 36$$

$$S = 36/0.4 = \$ 90$$

- b) What is the dollar markup?

$$M = S - C$$

$$M = 99 - 36 = \$ 54$$

- c) What is the percent of dollar markup based on cost?

$$\text{percent of dollar markup based on sellingprice} = M / S = 54 / 36 = 150 \%$$

Question 15:

A retail shop sells a certain type of kids toy for \$48. To make the desired profit, the store needs a 60% markup on cost.

- a) What is the cost?

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$$S = C + M$$

$$48 = C + 0.6C$$

$$48 = 1.6C$$

$$C = 48/1.6 = \$ 30$$

- b) What is the dollar markup?

$$M = S - C$$

$$M = 48 - 30 = \$ 18$$

- c) What is the percent of dollar markup based on selling price?

$$\text{percent of dollar markup based on selling price} = M / S = 18 / 48 = 37.5 \%$$

Question 16:

Jones Company produces pens. The company has a fixed cost (FC) of \$50,000. Each pen sells for \$3.00 with a variable cost (VC) of \$0.75 per pen. Find the Breakeven Point.

$$BE = FC / CM = 50000 / (3 - 0.75) = 22222.22$$