

2024

WARM UP GRADE 8



Quiz FRIDAY, April 5



1) A three wheeler is on sale for 20% off the regular price of \$1500. What is the sale price? could I take it a step further...what is the price with tax?

$$\begin{aligned} \text{Discount} &= 20\% \text{ of } 1500 \\ &= 0.20 \times 1500 \\ &= \$300 \end{aligned}$$

$$\begin{aligned} \text{New Price} &= 1500 - 300 \\ \text{Sales Price} &= 1200 \end{aligned}$$



$$\begin{aligned} \text{Tax} &= 15\% \text{ of Cost} \\ &= 0.15 \times 1200 \\ &= \$180 \end{aligned}$$

$$\begin{aligned} \text{Cost w tax} &= 1200 + 180 \\ &= \$1380 \end{aligned}$$

2) A backpack is on sale for 60% off. If the amount discounted is \$16.14 what is the regular price?

Sales Price

$$\begin{aligned} 60\% \text{ of } R &= 16.14 \\ 0.60 \times R &= 16.14 \\ \div 0.60 & \quad \div 0.60 \\ R &= \$26.90 \end{aligned}$$

-60% saved \$16.14

3) The population of a village was 26 000 people in the year 2019. Due to very few job opportunities 15% of the people move away in 2020. What was the population at the end of 2020?

$$\begin{aligned} \text{Move away} &= 15\% \text{ of } 26000 \\ &= 0.15 \times 26000 \\ &= 3900 \end{aligned}$$

$$\begin{aligned} \text{New Pop} &= 26000 - 3900 \\ &= 22100 \end{aligned}$$

The new population is 22100 in year 2020.

WARM UP GRADE 8



1) A three wheeler is on sale for 20% off the regular price of \$1500. What is the sale price? could I take it a step further...what is the price with tax?

Step 1)
 Save = 20% of Price
 $= 0.20 \times 1500$
 $= \$300$

Step 2)
 Sales Price
 $= \text{Price} - \text{Saved}$
 $= \$1500 - \300
 $= \$1200$



Step 3)
 Tax = 15% of Price
 $= 0.15 \times 1200$
 $= \$180$

Step 4)
 Cost with tax = Price + tax
 $= \$1200 + \180
 $= \$1380$

2) A backpack is on sale for 60% off. If the amount discounted is \$16.14, what is the regular price?

60% of Reg = \$16.14
 $0.60n = 16.14$
 $\frac{0.60n}{0.60} = \frac{16.14}{0.60}$
 $n = \$26.90$

3) Similar to quiz question

The population of a village was 26 000 people in the year 2011. Due to very few job opportunities 15% of the people move away in 2012. What was the population at the end of 2012?

move away = 15% of people
 \downarrow
 $= 0.15 \times 26000$
 move away = 3900

New Population $n = 26000 - 3900$
 $= 22100$

The new population for 2012 is 22100.

$$\begin{aligned} \text{8. (i) a) Discount} & \quad 20\% \text{ of } 89.99 \\ & \quad 0.2 \times 89.99 \\ & \quad 18 \end{aligned}$$

$$\begin{aligned} \text{b) Sale Price} & = \text{Reg} - \text{Disc} \\ & = 89.99 - 18 \\ & = 71.99 \end{aligned}$$

$$\begin{aligned} \text{c) HST} & \quad 15\% \text{ of } 71.99 \\ & \quad 0.15 \times 71.99 \\ & \quad 10.80 \end{aligned}$$

$$\begin{aligned} \text{Total Cost} & = \text{Price} + \text{tax} \\ & \quad 71.99 + 10.80 \\ & \quad 82.79 \end{aligned}$$

$$\begin{aligned} \text{(ii) Disc} & \quad 45\% \text{ of } 120 \\ & \quad 0.45 \times 120 \\ & \quad 54 \end{aligned}$$

$$\begin{aligned} \text{Sale Price} & = \text{Price} - \text{Disc} \\ & = 120 - 54 \\ & = 66 \end{aligned}$$

$$\begin{aligned} \text{HST} & \quad 15\% \text{ of } 66 \\ & \quad 0.15 \times 66 \\ & \quad 9.90 \end{aligned}$$

$$\begin{aligned} \text{Total Cost} & = \text{Price} + \text{tax} \\ & = 66 + 9.90 \\ & = 75.90 \end{aligned}$$

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10.

Choose A 30% off

$$\begin{aligned} \text{Disc } 30\% \text{ of } 25.00 \\ 0.3 \times 25 \\ 7.5 \end{aligned}$$

$$\begin{aligned} \text{Sale Price} &= 25 - 7.50 \\ &= 17.50 \end{aligned}$$

Choose B \$40 for 2 DVD
(or \$20 each)

Choose A is a better deal, it costs less.

$$\begin{aligned} \text{II. Amt of Dec} &= 18.98 - 11.39 \\ &= 7.59 \end{aligned}$$

$$\begin{aligned} \% \text{ Dec} &= \frac{\text{Amt of Dec}}{\text{Orig Amt}} \times 100\% \\ &= \frac{7.59}{18.98} \times 100\% \\ &= 0.40 \times 100\% \\ &= 40\% \end{aligned}$$

b) Sale Price 11.39

$$\begin{aligned} \text{HST} &= 15\% \text{ of } 11.39 \\ &= 0.15 \times 11.39 \\ &= 1.71 \end{aligned}$$

$$\begin{aligned} \text{Total Cost} &= 11.39 + 1.71 \\ &= \$ 13.10 \end{aligned}$$

$$Q. \frac{1}{2} \text{ of } 30 = \$15$$

$$\begin{array}{l} \text{1st Disc} \quad 25\% \text{ of } 30 \\ \quad \quad \quad 0.25 \times 30 \\ \quad \quad \quad 7.50 \end{array}$$

$$\begin{array}{l} \text{Sale Price} \quad 30 - 7.50 \\ \quad \quad \quad 22.50 \end{array}$$

$$\begin{array}{l} \text{2nd Disc} \quad 25\% \text{ of } 22.50 \\ \quad \quad \quad 0.25 \times 22.50 \\ \quad \quad \quad 5.63 \end{array}$$

$$\begin{array}{l} \text{New Sale} \\ \text{Price} \quad 22.50 - 5.63 \\ \quad \quad \quad 16.87 \end{array}$$

So NO the T-shirt is not 50% off,
if it was 50% off, it would be \$15
not \$16.87

$$13. \text{ Sale } 20\% \text{ off, Sale Price} = \$35.96$$

$$\begin{array}{l} \text{Disc } 20\% \text{ of reg} \\ \quad \quad \quad 0.2n \end{array}$$

$$n = \text{reg price}$$

$$\begin{array}{l} \text{Sale Price} = \text{Reg} - \text{Disc} \\ = n - 0.2n \\ = 0.8n \end{array}$$

$$\begin{array}{l} \text{Sale} \\ \text{Price} = \text{reg} - \text{Disc} \\ = 100\% - 20\% \\ = 80\% \\ \text{of reg} \\ \text{price} \end{array}$$

$$\begin{array}{l} 35.96 = 0.8n \\ \frac{35.96}{0.8} = \frac{0.8n}{0.8} \\ 44.95 = n \end{array}$$

$$14. \quad 15\% \text{ Disc} \quad \text{Disc} = 0.15 \times 129.99 \\ = 19.50$$

$$\text{Sale Price} = 129.99 - 19.50 \\ = 110.49$$

$$\begin{array}{l} \text{HST} \quad 15\% \text{ of } 113.09 \\ 0.15 \times 113.09 \\ 16.96 \\ \text{Sale Price with taxes} \quad 113.09 + 16.96 \\ 130.05 \end{array}$$

$$\text{Price without taxes} \quad 129.99$$

It is better to get a 15% discount than it is to have no taxes, because you pay the taxes on a lower amount.

% of reg price = amt of disc

$$15. \quad 33\% \text{ of reg price is } 28.38 \\ 0.33n = 28.38 \\ \frac{0.33n}{0.33} = \frac{28.38}{0.33} \\ n = 86.$$

The regular price was 86.

$$b) \text{ Sale Price} \quad 86 - 28.38 \\ 57.62$$

$$\text{HST} \quad 15\% \text{ of } 57.62 \\ 8.64$$

$$\text{Total Cost} \quad 57.62 + 8.64 \\ 66.26$$

1b. Disc 30% of 75 Customer 1
 0.3×75
 22.50

Sale Price $75 - 22.50$
 52.50

HST 15% of 52.50
 0.15×52.50
 7.88

Total Cost $52.50 + 7.88$
 60.38

Customer 2 - add tax then find disc

HST 15% of 75
 0.15×75
 11.25

Price with tax $75 + 11.25$
 86.25

Disc 30% of 84.75
 0.3×84.75
 25.43

Sale Price $84.75 - 25.43$
 59.32

The price is the $60.38 - 59.32 = 1.06$ diff
 but the second way is wrong

17. Store A

$$\begin{aligned} \text{Disc } 15\% \text{ of } 45.99 \\ 0.15 \times 45.99 \\ 6.89 \end{aligned}$$

$$\begin{aligned} SP &= \text{Reg} - \text{Disc} \\ &= 45.99 - 6.89 \\ &= 39.10 \end{aligned}$$

Store B

$$\begin{aligned} \text{Disc } 20\% \text{ of } 49.99 \\ 0.2 \times 49.99 \\ 10. \end{aligned}$$

$$\begin{aligned} SP &= \text{Reg} - \text{Disc} \\ &= 49.99 - 10 \\ &= 39.99 \end{aligned}$$

Store A has the better deal, you would save 89¢

Class/Homework

Quiz _____

Homework pg. 263 # 1-12

1 ab
3 ab
4 ac
5

6
7 ab
8 ← Good question
9 $\frac{\text{Diff}}{\text{orig}} \times 100\%$

11a

35% Disc, Amt of Disc \$42
what is reg price

35% of Reg Pr is Amt of Disc

$$35\% \text{ of } n = 42$$

$$0.35n = 42$$

$$\frac{0.35n}{0.35} = \frac{42}{0.35}$$

$$n = 120$$