

Lesson 16

Calculating with Percent:

Bills
 → taxes %
 → usage
 - rate /
 (units)

Recall:

Deductions represent 38%
 (of gross salary). ← whole

If you worked 53 hrs
 at 50 \$/hour (50 \$ an hour)
 how much money will be
 deducted.

\$ 2650
 \$ 1007

logic tool:
 The Want List
 WANT: the amount
 (\$) of dedu.
 TOOL: $DD = 38\% \times GS$
 INFO: GS
 ↳ have?
 want: GS.

$$G.S. = \text{Amount} = \text{units} \times \text{Rate}$$

$$G.S. = 53 \text{ hrs} \times 50 \text{ $/hr}$$

$$G.S. = \$2650$$

$$\% = 38\%$$

$$\% = \frac{38}{100}$$

$$\% = \frac{38}{100} = 100$$

$$\% = 0.38$$

no 01 in part A of ho 46.

Step 1. Whenever calculating with a % ALWAYS convert % to equivalent decimal (by dividing by a hundred)

Step 2. Times the decimals with the number after "% of"

$$DD = 38\% \text{ of } G.S.$$

$$DD = 0.38 \times 2650$$

$$DD = 1007 \$$$

(moving on at 11:15)

Understanding/Filling out Bills

Question 2: Alex goes to Leon's to purchase a sofa and dining table. The salesperson told him the taxes would total \$224.06.

Is this amount correct?

Do Q3 part A and take break till 12:35 :)

Show all work and fill in the missing amounts on the grey areas of the receipt below.

<h1>RECEIPT</h1>		part of the family	
Quantity	Description	Total Price	
1	Sofa	\$849.00	
1	Dining Table	\$599.00	
		Subtotal	1448 \$
Amount to be paid right away: <i>fed. prov.</i> (GST and QST): \$224.06		GST (5%)	72.40 \$
		QST (9.975%)	144.44 \$
		TOTAL	1664.84

Subtotal = the sum of the totals before tax (gets charged)

GST = 5% of the Subtotal

QST = 9.975% of the Subtotal

$$QST = 9.975\% \times 1448$$

$$QST = 0.09975 \times 1448$$

$$QST = 144.44$$

$$GST = 5\% \times 1448$$

$$GST = 0.05 \times 1448$$

$$GST = 72.4$$

Answer: Yes, the amount calculated for tax (\$224.06) is correct.

No, the amount calculated for tax (\$224.06) is incorrect.

total tax = 216.84 \$

Total = Subtotal + GST + QST

Tipping Etiquette - A percent, but on what?

Question 4: You go to a restaurant with your best friend for your birthday. Your friend gave you a \$25 gift card to help cover the cost. You both agree to split the remaining cost.

a) Complete the bill to determine how much you must each pay after your meal.

BILL	
Table#20	
2x Salad: \$5 each	$2 \times 5 = 10$
1x Lasagna: \$17	= 17
1x BBQ Chicken: \$15	= 15
2x Soft Drink: \$1.45 each	= 2.90
Subtotal 1:	\$ 44.90 ✓
GST (5%):	\$ 2.25
QST (9.975%):	\$ 4.40
Subtotal 2:	\$ 51.63 ✓✓
Gift card:	\$ 25 (your \$ you use to pay bill)
Total to pay:	\$ 26.63 ✗

<https://www.cnn.com/2018/02/12/tipping-trick-could-save-you-over-400-a-year.html>

tip = 6.73 \$

tip = 4.63 \$

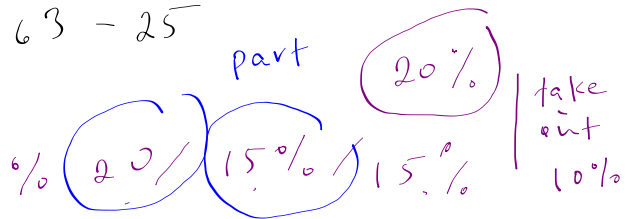
tip = 4

$0.05 \times 44.90 = 0.05 \times 44.90$

$0.09975 \times 44.90 = 0.09975 \times 44.90$

$51.63 - 25$

b) How much money should you leave as a tip?



$\$ = 15\% \text{ of } 26.63$

$\$ = 15\% \text{ of } 2$

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PART B: CALCULATING COST THAT IS A FUNCTION OF USAGE RATE AND TAXES

1. Determine the total cost of each of the following car rentals below, if taxes are 5% (GST) and 9.975% (QST):

a) Company A charges \$0.40/min plus \$0.75 per kilometer. Annie wishes to rent a car for six (6) hours for a trip of approximately 540 km.

$$\frac{6 \text{ hr}}{1 \text{ hr}} = \frac{x \text{ mins}}{60 \text{ min}}$$
rate
rate
25 yr old

Step 1. Convert hours to minutes to work with same units.

1 hr = 60 mins C.R.E.

$$60 \cdot 6 = \left(\frac{x}{60}\right) \cdot 60$$
Solve: perform opposite operation

$$360 \text{ min} = x$$

$$6 \text{ hr} \cdot \frac{60}{1}$$

$$\rightarrow 6 \text{ hr} \times 60$$

Step 2. Calculate total cost for the time

Usage rate formula:

T.C. = 0.4 \$/min x 360 min

T.C. = 144 $\frac{\$}{\text{min}} \times \frac{\text{min}}{1}$

T.C. = 144 $\frac{\$ \times \text{min}}{\text{min}}$

T.C. = 144 \$

Total Cost = (Cost per unit) x (Number of units)

Step 3. Calculate total cost for the mileage

Same usage rate formula.

0.75 \$/km 540 km

T.C. = 0.75 x 540

T.C. = 405 \$

Step 4. Create your own bill with Subtotal to accurately calculate taxes and final bill to pay.

Subtotal = T.C. + T.C.

Subtotal = 144 + 405

Subtotal = 549 \$

GST 5% = 27.45 \$

QST 9.975% = 54.76 \$

Total = Subtotal + GST + QST

(after taxes)

Total = 549 + 27.45 + 54.76

= 631.21 \$

2. Determine which choice is more economical if you are trying to rent a car for seventy two (72) hours for a trip of approximately 6000 km:

Note: There is no need to calculate taxes in your comparison

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Option 1

\$2/hour plus \$0.10 per kilometre

Option 2

\$4/hour plus \$0.45/kilometre

Option 3

\$22/day plus \$0.65 per kilometre

• economical = cheapest
(least \$)

• finish in a few HMK.