Warm up

13. When you eat at a restaurant, it is normal to leave a tip that is between 10% and 15% of the bill, depending on the quality of service.

<table>
<thead>
<tr>
<th>Item</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixed greens salad</td>
<td>$11.00</td>
</tr>
<tr>
<td>Vegetable pizza</td>
<td>$6.00</td>
</tr>
<tr>
<td>Risotto</td>
<td>$7.00</td>
</tr>
<tr>
<td>Total</td>
<td>$24.00</td>
</tr>
</tbody>
</table>

Thank you!

a) Suppose your food bill totals $24.00. What range of tip would be acceptable, assuming good service?

b) The GST and PST are usually shown on the bill. Describe how you can use this information to estimate the tip.

10% = 0.10 \times 24 = $2.40

15% = 0.15 \times 24 = $3.60

Applying Percentages to Commission

commission
- a payment earned for sales made
- usually expressed as a percent of sales
Look at the items in the illustration above. The company pays a 25% commission on sales.

1. **a)** Estimate how much you would earn if you sold one of each item or set.
   
   
   **Dolphin** ≈ $12
   
   **Horse** ≈ $18
   
   **Cat** ≈ $40
   
   **Total** ≈ $70
   
   **Commission** ≈ $70 \times 0.25

2. Which items would you try hardest to sell? Explain why.

   **Sell the cat ⇒ more commission!**

3. **a)** Which items, and how many of them, would you need to sell in order to earn $50?
   
   **b)** Explain how you figured this out.
   
   **c)** Is there another way to earn $50 by selling some of the items? Explain.

   
   
   4 = 48
   
   4 = 72
   
   2 = 80

   **Need to make a total of $200 of sales. Many ways to do this.**

4. **Reflect** Describe one advantage and one disadvantage of being paid by commission.

   **Advantage ⇒ potential to earn a lot**
   
   **Disadvantage ⇒ potential to earn nothing!**
Example 1: Calculate Commission Earnings

Devon has a summer job selling TV Listings subscriptions door-to-door. He is paid a commission of 40% of sales. Each new 1-year subscription sells for $25, including taxes. One week he sells 18 subscriptions. What is his commission for the week?

Total Sales = Cost x # of Subscriptions

= 25 x 18

= $450

Commission = Sales x rate / total

= 450 x 0.40

= $180

Example 2: Apply Rates to Commission

Refer to Example 1. Devon hopes to earn $1000 by the end of the summer. What total value must he sell?

Commission = total sales x rate / sales

\[
\frac{1000}{0.40} = y \times 0.40
\]

\[
\frac{0.40}{0.40} = \frac{2500}{y}
\]

$2500 = y
Many jobs in sales pay by commission.

Commission is usually calculated as a percent of sales. For example, if commission is 20% of sales, for each $1.00 of sales, the salesperson earns $0.20.

\[ \text{Commission} = \text{sales} \times \text{rate} \]