

# Percentage Increases

## 8.4

- Taxes, tips, and inflation are examples of percentage increases.
  - Inflation = is a decrease in the buying power of a dollar (or other currency), meaning that money is losing its value. One can buy fewer things for the same amount of money. Inflation results in an increase of prices.
  - Taxes added to goods and services:
    - PST = provincial sales tax
    - GST = goods and services tax
    - HST = harmonized sales tax (PST + GST = HST in some Canadian provinces)
- ↙ Yukon
- 5% (GST) in Alberta, British Columbia, Manitoba, Northwest Territories, Nunavut, Quebec, Saskatchewan, and Yukon
  - 13% (HST) in Ontario
  - 15% (HST) in New Brunswick, Newfoundland and Labrador, Nova Scotia, and Prince Edward Island

Example 1:

Calculate the final price = price after taxes are added. Calculate with GST = 5% = 0.05

a) Price Tag: \$25.60

$$\text{GST} = 5\% = 0.05$$

$$(25.60)(0.05) = 1.28$$

GST = \$ 1.28

$$25.60 + 1.28$$

$$\boxed{\$26.88}$$

Final Price: \$ 26.88

b) Price Tag: \$135.00

$$(135.00)(0.05)$$

$$= 6.75$$

GST = \$ 6.75

$$135.00 + 6.75$$

$$\boxed{= 141.75}$$

Final Price: \$ 141.75

Example 2: A predicted inflation for 2022 is 6.1%. What should the minimum wage be in order to keep up with inflation? Note: Minimum wage in the Yukon is \$15.70.

$$6.1\% \rightarrow 0.061$$

$$(15.70)(0.061) = 0.9577 \approx 0.96$$

$$15.70 + 0.96 = 16.66$$

∴ The minimum wage should be \$16.66

Example 3: Calculate a tip for a server and the final price.

a) Price before taxes: \$28.00, <sup>0.05</sup>GST: 5%, <sup>0.20</sup>Tip: 20% (calculated from the price before taxes).

$$\left. \begin{array}{l} \text{GST: } (28.00)(0.05) = 1.40 \\ \text{Tip: } (28.00)(0.20) = 5.60 \end{array} \right\} 1.40 + 5.60 = 7.00$$

$$\rightarrow \text{Total price } 28.00 + 7.00 = \$35.00$$

b) Price before taxes: \$115.00, <sup>0.05</sup>GST: 5%, <sup>0.20</sup>Tip: 20% (calculated from the price before taxes).

$$\left. \begin{array}{l} \text{GST: } (115.00)(0.05) = 5.75 \\ \text{Tip: } (115.00)(0.20) = 23.00 \end{array} \right\} 5.75 + 23.00 = 28.75$$

$$\rightarrow \text{Total price: } 115.00 + 28.75 = \$143.75$$