

## Combining Percents

### Example - Percents are Being Applied at the Same Time

A \$15 CD (I know...who buys CDs these days?!?!) has **5% GST** and **7% PST**.  
Calculate:

GST stands for government sales tax.  
PST stands for provincial sales tax.  
Currently in MB, GST is 5% and PST is 7%.

Heads up!  
My percent signs  
look a little  
funny!

a) Total tax  $5\% + 7\% = 12\%$  tax We now need to find 12% of \$15.

Method 1 - Same as video

$$12 \div 100 = 0.12$$

$$0.12 \times \$15 = \$1.80$$

Learned  
in  
Section 4.3  
Changed  
percent to decimal.

Method 2 - Use percent button

$$12 \boxed{\%} \boxed{\times} 15 = \$1.80$$

OR

$$15 \boxed{\times} 12 \boxed{\%} = \$1.80$$

You have to  
figure out  
how to  
enter it  
in your  
calculator.

b) Total cost

$$\begin{array}{r} \text{Cost of CD} + \text{Total tax} \\ \downarrow \qquad \qquad \downarrow \\ \$15 \quad + \quad \$1.80 = \$16.80 \end{array}$$

Let me know  
if you're not  
sure how to  
enter it in  
yours...  
email me a pic  
of your calculator.

If percents are being applied to a number at the same time (like tax), the percents CAN be combined.

Outcome:

N3 - Demonstrate an understanding of percents greater than or equal to 0%

### Example - Percents are NOT Being Applied at the Same Time

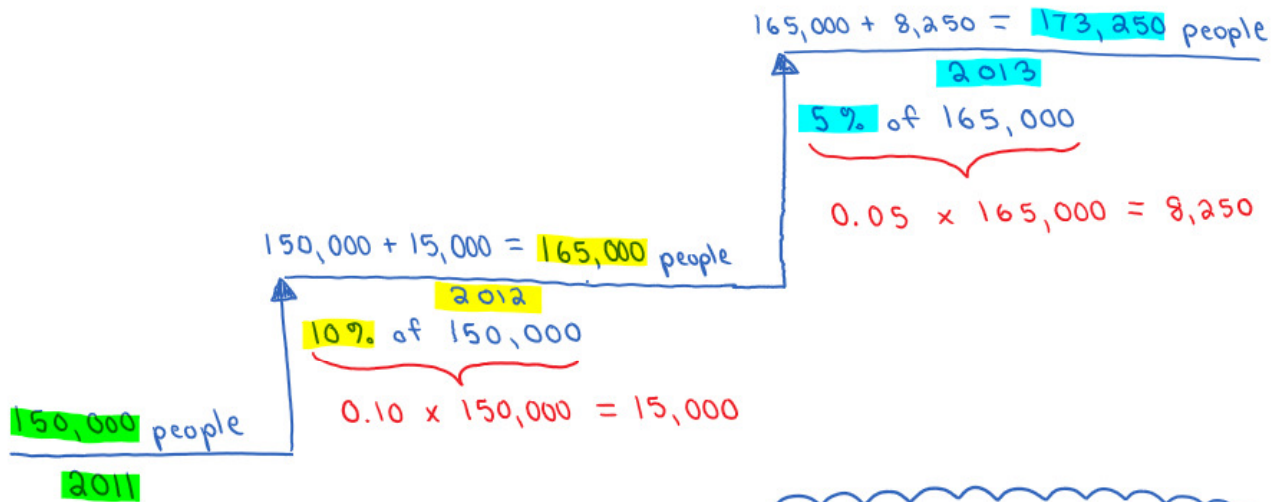
In 2011, Langley population was 150,000 people.

In 2012, it increased by 10%.

In 2013, it increased by 5%.

How many people are there at the end of 2013?

*cannot be combined because being applied at a different time*



There would be 173,250 people at the end of 2013.

If percents are being applied at different times (like a discount on a discount) the percents CANNOT be ~~combined~~. In this case, drawing a "step" for each step is helpful.

Combined.



Practice the following:

**Required - Page 148 # 4-7, 9, 10**

Optional (challenge yourself!!!) - Page 149 #13, 14