

# EQUITY

## LEARNING PLACE

### Elementary Math Topical (Percentage)

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#### Question 1:

A salesman earns a 3% commission on the sales he makes. He earned \$36 after selling a laptop that was on a 25% discount. Find the original selling price of the laptop.

#### Question 2:

Yu Jiang bought a limited-edition book in 2015. In 2016, he sold it for \$310 at a profit of 150%. Find the price at which he bought the book in 2015.

#### Question 3:

The same high definition television model is being sold at two stores

Store **A** charges \$1599 inclusive of 7% GST.

Store **B** charges \$1526 without GST.

What is the difference in price, inclusive of GST, the customer has to pay if the television was bought from Store **B**.

#### Question 4:

Crystal works part time in a famous watch shop. She is paid \$8.50 an hour she works. She is also paid a bonus 9% of the value of the products she sells. During a particular week, she works for 43 hours and sells watches worth \$1820, Calculate her total earnings for the week.

#### Question 5:

At Carousell (an online marketplace), a TV console is being sold at \$273. The buyer states that he makes a loss of 17% on the price he paid for. Calculate the price at which the buyer purchased the TV console.

#### Question 6:

In Germany, Mary spends €215 using her credit card. he has to pay a 2.8% credit card fee on the converted Singapore dollar for the foreign currency transactions. The credit card company uses an exchange rate between Singapore dollars (\$) and euro (€) of \$1 = €0.62. Calculate the total cost in Singapore dollar that Mary has to pay the credit card company. Give your answer correct to the nearest cent.

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#### Question 7:

A store charges a Goods and Services Tax (GST) of 7% for all items sold. Mr Tan paid a total of \$2306.92 for a washing machine and a digital television, inclusive of GST. Given that the price of the digital television excluding GST was \$1588, find the price of the washing machine excluding GST.

#### Question 8:

The cash price of a camera is \$1020. If a customer wants to pay by hire purchase, he will have to pay a down payment of 20%. The balance will be charged with interest and has to be paid over the next 18 months.

- Calculate the amount of downpayment he has to pay.
- Given that the interest rate charged per annum is 9%, calculate the monthly instalment.

#### Question 9:

Paul bought a painting for \$345. Ten years later he sold it for a profit of 280% of the cost price. Calculate the selling price.

#### Question 10:

The height of a right circular cone is increased by 9% and the radius of its base area is decreased by 6%. Ernest claims that there is a percentage increase in the volume of the cone. Do you agree with his claim? Justify your answer with working.

#### Question 11:

The length of each side of a square is increased by 20%. Find the percentage increase in the area.

#### Question 12:

When  $p$  is decreased by 20% and then increased by 10%, it becomes  $q$ . Express the ratio of  $p : q$  in its simplest form.

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#### Question 13:

A shopkeeper buys 1440 pencils at 25 cents each. He sells 40 dozens at \$3.60 per dozen and another 30 dozens at \$4.20 per dozen. At what price must he sell each of the remaining pencils in order to make a profit of  $16\frac{2}{3}\%$ ?

#### Question 14:

Jake and Tom visited a car showroom together and each decided to buy a car of the same model. The list price of the car in the showroom was \$80 000.

- a) Jake paid for the new car in cash and was given a discount. If he paid \$70 400, calculate the percentage discount.
- b) Tom traded in his old car for \$30 000. He then paid cash deposit of 40% of the net price and paid the balance in equal monthly instalments over 5 years with a simple interest of 3.5% per annum. Calculate the monthly instalment.

#### Question 15:

If a woman sells an art piece at \$200, she would make a loss of 20%. Evaluate the selling price of the art piece if she wants to make a profit of 15%.

#### Question 16:

Siti imported a piece of jewellery at \$228. She decided to sell it at a profit of 135% of its cost. Find the selling price of the jewellery **inclusive** of 7% GST.

#### Question 17:

- a) Express 0.08 as a percentage.
- b) Adam bought a camera for \$262.15. The price was inclusive of the 7% Goods and Services Tax (GST). How much GST did Adam pay?

#### Question 18:

Jason answered 75% of the first 60 questions correctly in a Mathematics Test consisting of 100 questions. Find the percentage of the other 40 questions that he needs to answer correctly for his result for the entire test to be 80%.

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#### Question 19:

During the Great Singapore Sale, a retailer made the following offer **A**:

|               |
|---------------|
| Buy 2 shirts, |
| Get 1 free!   |

After the Great Singapore Sale, he changed his offer to **B**:

|   |
|---|
| Buy 1 shirt,                            |
| Get the 2 <sup>nd</sup> one at 50% off! |

By considering the percentage of the original price the customer needs to pay for each shirt, determine whether offer **A** or **B** is the better deal for the customer.

#### Question 20:

On average, a bakery sells 500 chicken burgers at \$2.50 each a day. When the price of each burger is increased by 20%, the total sales volume drops by 25%.

- Find the new price of each burger.
- Find the number of burgers sold at the new price.
- What is the percentage change in the total sales by the bakery with this increase in price?