

# Percentage

1. 20% of the cards in a box are red. The number of blue cards is  $\frac{1}{4}$  the number of red cards. The remaining 150 cards are made up of green and white cards. There are  $\frac{2}{3}$  as many green cards as white cards.
- (a) What percentage of the cards in the box are green?  
(b) How many cards are there altogether?

Answers: (a) \_\_\_\_\_

(b) \_\_\_\_\_

2. The original price of a refrigerator was \$1700. Sylvia bought it at a discount of 20% and had  $\frac{4}{5}$  of her money left. She then spent 30% of the money left on a television.
- (a) How much was the cost of the refrigerator after the discount?  
(b) How much did Sylvia spend on the television?

Answers: (a) \_\_\_\_\_

(b) \_\_\_\_\_

# Solution to Percentage

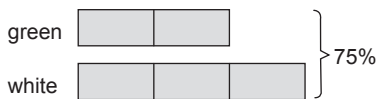
1.

Step 1 : Find the percentage of blue cards

$$\frac{1}{4} \times 20\% = 5\%$$

Step 2 : Find the percentage of green and white cards

$$100\% - 20\% - 5\% = 75\%$$



$$5 \text{ units} \rightarrow 75\%$$

$$1 \text{ unit} \rightarrow 75\% \div 5 = 15\%$$

$$\text{Green: } 2 \text{ units} \rightarrow 2 \times 15\% = 30\%$$

$$\text{White: } 3 \text{ units} \rightarrow 3 \times 15\% = 45\%$$

(a) 30% of the cards in the box are green.

Step 3 : Find the total number of cards

$$75\% \rightarrow 150 \text{ cards}$$

$$1\% \rightarrow 150 \div 75 = 2 \text{ cards}$$

$$100\% \rightarrow 100 \times 2 = 200 \text{ cards}$$

(b) There are 200 cards altogether.

2.

Step 1 : Find the cost of the refrigerator after the discount

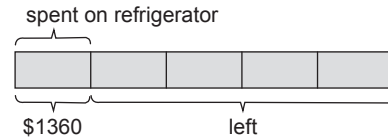
$$100\% \rightarrow \$1700$$

$$1\% \rightarrow \$1700 \div 100 = \$17$$

$$80\% \rightarrow 80 \times \$17 = \$1360$$

(a) The refrigerator cost \$1360 after the discount.

Step 2 : Draw a model



Step 3 : Find the amount of money Sylvia had left

$$1 \text{ unit} \rightarrow \$1360$$

$$4 \text{ units} \rightarrow 4 \times \$1360 = \$5440$$

Step 4 : Find the amount spent on television

Television:

$$30\% \rightarrow \frac{30}{100} \times \$5440 = \$1632$$

(b) She spent \$1632 on the television.

Answers: (a) 30%

(b) 200 cards

Answers: (a) \$1360

(b) \$1632