

Study the Following Examples: Direct Proportion

1. Oranges

The cost of oranges is directly proportional to the number of oranges bought. If 4 oranges cost Tsh 1,200, find the constant of proportion.

Solution

Let:

Cost = y

Number of oranges = x

$$y \propto x$$

$$y = kx$$

$$k = y/x = 1200/4 = 300$$

Constant of proportion = 300

Meaning: Each orange costs Tsh 300

2. Mangoes

The cost of mangoes is directly proportional to the number of mangoes bought. If 5 mangoes cost Tsh 2,000, find the constant of proportion.

Solution

Let:

Cost = y

Number of mangoes = x

$$y \propto x$$

$$y = kx$$

$$k = y/x = 2000/5 = 400$$

Constant of proportion = 400

Meaning: Each mango costs Tsh 400

3. Exercise Books

The cost of exercise books is directly proportional to the number of books bought. If 8 books cost Tsh 4,000, find the constant of proportion.

Solution

Let:

Cost = y

Number of books = x

$$y \propto x$$

$$y = kx$$

$$k = y/x = 4000/8 = 500$$

Constant of proportion = 500

Meaning: Each book costs Tsh 500

4. Cloves

The price of cloves is directly proportional to kilograms bought. If 3 kg cost Tsh 24,000, find the constant of proportion.

Solution

Let:

Price = y

Kilograms = x

$y \propto x$

$y = kx$

$k = y/x = 24000/3 = 8000$

Constant of proportion = 8,000

Meaning: 1 kg of cloves costs Tsh 8,000

5. Fare and Distance

Fare is directly proportional to distance travelled. If 6 km cost Tsh 2,400, find the constant of proportion.

Solution

Let:

Fare = y

Distance = x

$y \propto x$

$y = kx$

$k = y/x = 2400/6 = 400$

Constant of proportion = 400

Meaning: Fare is Tsh 400 per kilometre

6. Coconuts and Trees

The number of coconuts collected is directly proportional to trees climbed. If 7 trees give 49 coconuts, find the constant of proportion.

Solution

Let:

Coconuts = y

Trees = x

$y \propto x$

$y = kx$

$k = y/x = 49/7 = 7$

Constant of proportion = 7

Meaning: Each tree gives 7 coconuts

7. Notebooks

The cost of notebooks is directly proportional to the number bought. If 3 notebooks cost Tsh 1,800, find the constant of proportion.

Solution

Let:

Cost = y

Number of notebooks = x

$y \propto x$

$y = kx$

$k = y/x = 1800/3 = 600$

Constant of proportion = 600

Meaning: Each notebook costs Tsh 600