**ALPHA UNIVERSITY BORAMA**

**Assignment of math’s methods**

**Name: Khadar Ali Abdi faculty: Accounting ID: 519**

1. express the ration 12:16 in its simplest form.

*Answer*

***12 ÷ 4 = 3***

***16 ÷ 4 = 4***

***So, the simplified ratio is 3:4.***

1. Divide $ 120 in the ratio of 2:3​.

Answer

**Given**

* Total amount: $120
* Ratio: 2∶3

**Solve**

**Step 1**. Calculate the total parts in the ratio.

* Total parts: 2+3 = 5

**Step 2**. Calculate the total parts in the ratio.

* Value part one $120/5 = $24

**Step 3**. Calculate the value of the first part.

* Value of the first part: 2 x $24 = $48

**Step 4**. Calculate the value of the second part.

* Value of the second part: 3 x $ 24 = $72

1. The ratio of cats to dogs in a pet shop is 4:7. If there are 28 dogs, how many cats are there?

given

* The ratio of cats to dogs is 4∶7
* There are 28 dogs.

Solve

* Let 𝑥 4/7 = 𝑥 / 28

Solution

* **There are 16 cats**

1. If a person earns $240 for working 8 hours, what is the rate of pay per hour?

**Given**

Total earnings: $ 280

Total hours worked: 8 hours

. **solve**

**Step 1**. Calculate the rate of pay per hour

Rate of per hour = total earnings / total per hour

Rate of per hour = $280 / 8 hour

Rate of per hour = $ 30 per hour

Solution

* ***The rate of per hour is $30***

1. Are the ratios 6:9 and 8:12 proportional?

**given**

two ratios: 6: 9 and 8: 12

step1:

6 x 12 = $ 72.

8 X 9 = $ 72.

**Solution**

* ***The ratios 6:9 and 8:12 are proportional.***

1. If 3 shirts cost $45, how much would 5 shirts cost at the same rate?

**Given**

The cost of 3 shirts is $ 45.

**Solve**

Divide the total cost of the shirts by the number of shirts: $45/3 = $15

**Solution**

* **The cost of 5 shirts is $ 75**

1. If 5 pens cost $10, how much do 12 pens cost?

**Given**

The cost of 5 pens is $10

Solve

 Divide the total cost of 5 pens by 5: $10/5 = $2

 The cost of one pen is $2

**Solution.**

* **The cost of 12 pens is $24**

1. A class has 18 boys and 12 girls. What is the ratio of boys to the total number of students?

**Given**

Number of boys: 18

Number of girls: 12

**Solve**

* Total students = Number of boys + Number of girls
* Total students = 18 + 12
* Total students = 30

**Solution**

* The ratio of boys to the total number of students is:

1. Find 25% of 480.

**Given**

* The percentage: 25 %
* The whole number: 480

Solve

Step1

25 % =

**Step 2**

=

Step 3

Step 4

1. A jacket is sold for $150 after a 20% discount. What was the original price?

Given

* The selling price after discount is $150
* The discount rate is 20%

**Solve**

The selling price is 100 % - 20% = 80 %

* **0.8 = 150**

**Solution**

* The original price of the jacket was $187.5

1. A salesperson earns a 5% commission on sales. If they sell goods worth $2,000, how much commission do they earn?

**Given**

Commission rate: 5%

Value of goods sold: $2,000

Solve

Multiply the value of goods sold by the commission rate:

* Commission = Value of goods sold × Commission rate
* Commission = $2,000 x 5%
* Commission = $2,000 x
* Commission = $2,000 x 0.05
* Commission = $100 %

Solution

* The salesperson earns a commission of $100

Given

1. 60% of a number is 180

Solve

Step1

Convert 60% to a decimal:  **= 0.6**

Let 𝑥 be the original number.

The equation is 0.6 x =180

**Step 2**

Divide both sides of the equation by 0.6:

* X = .
* **X = 300**

.

. **Solution**

* **The original number is 300**

1. Find the simple interest on $1,200 at a rate of 5% per annum for 3 years.

Given

* Principal amount: $1,200
* Rate of interest: $5% per annum
* Time period: 3 years

Solve

Step1

Substitute the given values into the formula:

* SI =
* SI =
* SI = 180

**Solution**

* ***The simple interest is $180***

1. A sum of $2,000 is invested at 10% per annum for 3 years compounded annually. Find the total amount.

Given

* Principal amount: P = $ 2,000
* Rate of interest: R = 10% per annum
* Time period: T = 3 years
* Compounding frequency: Annually

Solve

Step1

* A=2000 (1+

Step 2:

* A=2000 (1+
* A=2000 (1.1

Step 3:

* (1.1)3 = 1.1 x 1.1 x 1.1 = 1.331

Step4:

* A=2000 x 1.331
* 2662

Solution

* **The total amount after 3 years is $2662**.

1. A loan of $2,000 is given for 2 years at a rate of 6% per annum. What is the total amount to be repaid at the end of the period?

Given

Principal loan amount: $ 2,000

Loan term: 2 years

Interest rate: 6 per annum

Solve

**Step 1**

Use the formula I = P.R.T

Substitute the given values: I = 2000 X 0.06 X 2

Calculate the interest: I = $240

**Step2**

Use the formula A= P + I

Substitute the values: A= 2000 + 240

Calculate the total amount: A= $2240.

**Solution**

* ***The total amount to be repaid at the end of the period is $2240***