**ALPHA UNIVERSITY BORAMA**

**Assignment of math’s methods**

**Name: Ahmed Ali Mohamed faculty: Social Work ID:862**

**The assignment**

**Individual assailment the assignment 30 marks**

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1. Express the ratio 12:16 in its simplest form.

**Ans: Factors of 12: 1, 2, 3, 4, 6, 12**

**Factors of 16: 1, 2, 4, 8, 16**

**GCD = 4 (the largest common factor)**

**: = 3:4**

1. Divide $120 in the ratio 2:3.

**Ans: $120 in 2:3 2+3=5**

**= $24 Value of one part**

**First share (2 parts): 2x$24= $48**

**Second share (3 parts): 3×$24=$72**

**Final Division $48: $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?

Ans: 7 dogs=28 1 part = = 4

**Number of cats = 4x4=16 cats: dogs 16:28 = 4:7**

**Final answer 16 cats in the pet shop**

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

**Rate per hour: = 30 $30 per hour**

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

**Ans: Yes, the ratios 6:9 and 8:12 are proportional because they both simplify to 2:3.**

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

**Ans: Cost per shirt= = $15 Cost of 5 shirts = 5x15= $75**

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

**Ans: Cost per pen= = $2**

**Cost of 12 pens=12×$2=$24**

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

Ans: **Given:**

**Number of boys = 18**

**Number of girls = 12**

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

**Ratio=Number of boys: Total students=18:30**

**= 3:5 Final answer is 3:5**

1. Find 25% of 480.

**Ans: 25% of 480= x 480 = 0.25x480 =120**

**Final answer 25% of 480 is 120**

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

**Ans: Given:**

**Selling price after discount = $150**

**Discount percentage = 20%**

**Selling price=80%×Original price150=0.80×Original price**

**150=0.80×Original price**

**= 187.50**

**the original price of the jacket was $187.50**

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

**Ans: Given:**

**Commission rate = 5%**

**Total sales = $2,000**

**Commission=Total sales × Commission rate**

**Commission=2000×0.05 Commission=100 Commission=100**

1. If 60% of a number is 180, what is the original number?

Ans: **Given:**

**60% of the number = 180**

**60%= 0.6 180/0.60= 300**

the **original number is 300**

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

**Ans: Given:**

**Principal (P) = $1,200**

**Rate (R) = 5% per annum**

**Time (T) = 3 years**

**Simple Interest (SI)=100*P*×*R*×*T*​**

**SI=1001200×5×3​ = 180**

**the simple interest earned 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 (P) = $2,000**

**Annual Interest Rate (r) = 10% = 0.10**

**Time (t) = 3 years**

**Compounding Frequency (n) = 1 (annually)**

***A*=*P*(1+*nr*​)*n*×*t***

***A*=2000×(1+0.10)3A=2000×(1.10)3**

***A*=2000×(1.10)3**

**the total amount after 3 years is $2,662.**

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 (P) = $2,000**

**Annual Interest Rate (R) = 6% = 0.06**

**Time (T) = 2 years**

**SI=100*P*×*R*×*T*​  
*SI=2000×6×2​/100***

**SI= 240**

***Total Amount=Principal Simple Interest***

***Total Amount=2000+240***

***Total Amount=2240***