**ALPHA UNIVERSITY BORAMA**

**Assignment of math’s methods**

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**The assignment**

**Individual assailment the assignment 30 marks**

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1:To simplify the ratio 12:16, we find the greatest common divisor (GCD) of both numbers. The GCD of 12 and 16 is 4.  
  
**Now, divide both numbers by 4:  
12 \ 4 = 3  
16 \ 4 = 4  
So, the simplified ratio is 3:4**

2: divide $120 in the ratio 2:3:  
  
**1. Add the parts of the ratio:  
2 + 3 = 5 parts**  
  
**2. Find the value of one part:  
$120 ÷ 5 = $24 per part**  
  
3. Multiply to find each share:  
  
**First share (2 parts): 2 × $24 = $48  
  
Second share (3 parts): 3 × $24 = $72  
  
First share = $48  
  
Second share = $72**  
3:The ratio of cats to dogs in a pet shop is 4:7. If there are 28 dogs, how many cats are there?  
  
**Cats : Dogs = 4 : 7  
  
2. Find how many times 7 fits into 28:  
28 ÷ 7 = 4  
  
3. Multiply the cat part by 4:  
4 × 4 = 16 cats**

4: If a person earns $240 for working 8 hours, what is the rate of pay per hour?  
  
**240 \div 8 = 30  
  
So, the person earns $30 per hours  
5:Are the ratios 6:9 and 8:12 proportional?  
  
6:9 → divide both by 3 → 2:3  
  
8:12 → divide both by 4 → 2:**3  
  
6: If 3 shirts cost $45, how much would 5 shirts cost at the same rate?  
45 ÷ 3 = $15 per shirt  
  
Now, multiply by 5:  
  
5 × $15 = $75  
Answer: 5 shirts would cost $75.

**7**: If 5 pens cost $10, how much do 12 pens cost?  
10 ÷ 5 = $2 per pen  
  
**Now, multiply by 12:  
12 × $2 = $24  
Answer: 12 pens would cost $24**.

8: 5 pens cost $10, how much do 12 pens cost?  
A class has 18 boys and 12 girls. What is the ratio of boys to the total number of students?  
**18:30  
Boys: 18  
- Girls: 12  
- Total students = 18 + 12 = 30  
  
18 ÷ 6 = 3  
  
30 ÷ 6 = 5  
Answer: The simplified ratio is 3:5**

9:Find 25% of 480.

**25% of 480 = (25/100) × 480  
  
Now, multiply:  
  
= 0.25 × 480  
= 120**  
  
**10**:A jacket is sold for $150 after a 20% discount. What was the original price?  
  
**0.80x = 150  
  
Divide both sides by 0.80:  
  
x = \frac{150}{0.80} = 187.50  
  
Answer: The original price was $187.50**

11 :A salesperson earns a 5% commission on sales. If they sell goods worth $2,000, how much commission do they earn?  
**0.80x = 150  
  
Divide both sides by 0.80:  
  
x = \frac{150}{0.80} = 187.50**  
 **Answer: The salesperson earns $100 in commission.**

12=If 60% of a number is 180, what is the original number?  
  
**60\% \text{ of } x = 180 \Rightarrow 0.60x = 180  
  
Divide both sides by 0.60:  
  
x = \frac{180}{0.60} = 300**13-Find the simple interest on $1,200 at a rate of 5% per annum for 3 years.  
  
\text{Simple Interest} = \frac{P \times R \times T}{100}  
  
Where:  
  
**P = Principal = $1,200  
  
R = Rate = 5%  
  
T = Time = 3 years  
\text{SI} = \frac{1200 \times 5 \times 3}{100} = \frac{18,000}{100} = 180**

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

**Interest =2000\*6\*2/100=240 so A=2000+240=2240**

So, at the end of \*\*2 years\*\*, the total repayment amount will be \*\*$2,240\*\*.  
  
15: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?

**A=200\*(1+10/100)3**

**A=2000(1.1)3**

**A=2000\*1.331**

**A=2662**