1. 12:16 → Simplify by dividing both by 4: 3:4

2. $120 in ratio 2:3 → 2+3 = 5 parts → $120 ÷ 5 = $24 per part

2 parts = $48, 3 parts = $72 → $48 and $72

3. Ratio cats:dogs = 4:7, dogs = 28

1 part = 28 ÷ 7 = 4 → 4 parts = 4 × 4 = 16 cats

4. $240 ÷ 8 hours = $30 per hour

5. 6:9 = 2:3, 8:12 = 2:3 → Yes, they are proportional

6. 3 shirts = $45 → 1 shirt = $15 → 5 shirts = 5 × 15 = $75

7. 5 pens = $10 → 1 pen = $2 → 12 pens = 12 × 2 = $24

8. Boys = 18, Total = 18+12 = 30 → Ratio = 18:30 = 3:5

9. 25% of 480 = 0.25 × 480 = 120

10. Let original price = x → 20% discount means paying 80%

0.8x = 150 → x = 150 ÷ 0.8 = $187.50

11. 5% of $2,000 = 0.05 × 2000 = $100 commission

12. 60% = 180 → 0.6x = 180 → x = 180 ÷ 0.6 = 300

13. Simple Interest = (P × R × T)/100 = (1200×5×3)/100 = $180

14. Compound interest:

A = P(1 + r/100)^t = 2000(1 + 0.1)^3

A = 2000 × 1.1³ = 2000 × 1.331 = $2,662

15. Simple Interest = (2000×6×2)/100 = $240

Total = 2000 + 240 = $2,240