# Financial mathematics - Practice 1

Name: _____ Date: _____

16 questions | 44 marks | 60 minutes

Percentages, simple interest, fixed costs, budgets and model checks.

A scientific calculator may be used.

**1.** Find 15% of 80 dollars. [2 marks]

**2.** Increase 125 dollars by 12%. [2 marks]

**3.** A sale price is 96 dollars after a 20% discount. Find the original price. [3 marks]

**4.** A fee falls from 90 to 72 dollars. Find the percentage decrease. [2 marks]

**5.** A 600-dollar principal earns 4% simple interest per year for 3 years. [3 marks]

**(a)** Find the interest. [2 marks]

**(b)** Find the final amount. [1 mark]

**6.** Find simple interest on 800 dollars at 8% per year for 9 months. [3 marks]

**7.** A 960-dollar principal earns 144 dollars simple interest at 5% per year. Find the time in years. [3 marks]

**8.** A cost rule is $C = 12 + 4n$ dollars. Find the cost for 5 items. [2 marks]

**9.** Plan A costs $10 + 3n$ dollars and Plan B costs $22 + n$ dollars. [5 marks]

**(a)** At what count are costs equal? [3 marks]

**(b)** Which is cheaper for 4 items? [2 marks]

**10.** Income is 200 dollars. Planned expenses are 75, 48 and 32 dollars. Find the balance. [2 marks]

**11.** Income is 200 dollars. Planned expenses are 75, 48 and 32 dollars, plus a 15-dollar reserve for unexpected costs. What is left to spend? [2 marks]

**12.** A stall sells 25 items at 4 dollars each. Costs are 30 dollars plus 1.20 dollars per item. Find the surplus. [3 marks]

**13.** Complete the costs for $C = n^2 + 2n + 5$ at $n = 0, 1, 2$ and classify the model. [3 marks]

**14.** Revenue is $R = n(18 - n)$ dollars. Find revenue and price per item at $n = 5$. [3 marks]

**15.** Why is $n = 20$ unsuitable in the selling model $R = n(18 - n)$? [3 marks]

**16.** A student calculates 8,000 dollars interest on 1,000 dollars at 4% simple interest for 2 years. Correct the calculation. [3 marks]