Simple & Compound Interest: The Grade 10 Question Types

MEMORANDUM

Name: ..... Class: .....

Date: .....

MARK ____ / 27

Answer all questions. Show all your working — marks are awarded for method as well as the final answer. **Teacher copy: accept any correct equivalent method.**

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1 R1 000 at 10% simple interest for 2 years — total? *(simple)* (2)

$1000(1 + 0{,}10 \times 2) =$ **R1 200** ✓✓ (2)

2 R3 000 at 5% simple interest for 4 years — total? *(simple)* (2)

$3000(1 + 0{,}20) =$ **R3 600** ✓✓ (2)

3 R1 000 at 10% compound for 2 years — total? *(compound)* (3)

$1000(1{,}10)^2 =$ **R1 210** ✓✓✓ (3)

4 R5 000 at 6% compound for 3 years (to cents). *(compound)* (3)

$5000(1{,}06)^3 \approx$ **R5 955,08** ✓✓✓ (3)

5 Interest on R2 000 at 8% compound over 2 years. *(interest)* (3)

$2000(1{,}08)^2 - 2000 = 2332{,}80 - 2000 =$ **R332,80** ✓✓✓ (3)

6 What must you invest at 8% compound to get R5 000 in 3 years? *(present value)* (3)

$5000 \div (1{,}08)^3 \approx$ **R3 969,16** ✓✓✓ (3)

7 R500 grows to R650 in 3 years (simple). Find the rate. *(rate)* (3)

$150 = 500 \cdot i \cdot 3 = 1500i \rightarrow i =$ **10%** ✓✓✓ (3)

8 A loaf of bread costs R22 today. Inflation has run at 6% p.a. for the past 4 years. What did it cost 4 years ago? *(inflation, backwards)* (3)

$22 \div (1{,}06)^4 = 22 \div 1{,}262477 \approx$ **R17,43** ✓✓✓ (3)

9 Which is more after 5 years on R1 000 at 10% — simple or compound? *(compare)* **(3)**

> Simple: $1\,000(1 + 0{,}1 \times 5) = \text{R}1\,500$
> Compound: $1\,000(1{,}1)^5 = \text{R}1\,610{,}51$
> **Compound**, by R110,51 — it earns interest on interest ✓✓✓ (3)

10 A R60 item rises with 8% inflation for 1 year. New price? *(inflation)* **(2)**

> $60 \times 1{,}08 =$ **R64,80** ✓✓ (2)

TOTAL: 27 marks

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