

Name: _____

TOPIC TEST

Interest and depreciation

- Time allowed: 45 minutes
- Part A: 20 multiple-choice questions (20 marks)
- Part B: 9 free-response questions (30 marks)
- Total: 50 marks

Part A

20 multiple-choice questions
1 mark each: 20 marks
Circle the correct answer.

- | | |
|--|--|
| <p>1 What is the simple interest earned from an investment of \$21 350 at 2.25% p.a. for 250 days?</p> <p>A \$32.90
B \$329.02
C \$333.59
D \$328.13</p> <p>2 Simon invests \$4600 for 2 years and 8 months at a flat rate of 3.6% p.a. What is the total value of the investment at the end of this period?</p> <p>A \$441.60
B \$5047.12
C \$5041.60
D \$5030.56</p> <p>3 For how long must \$31 000 be invested at 5.2% p.a. simple interest to earn \$6300?</p> <p>A 3 years 11 months
B 3 years 10 months
C 3 years 9 months
D 3 years 8 months</p> | <p>4 Lorena earned \$231.40 interest from an investment of \$14 270 over 84 days. What was the simple interest rate per day?</p> <p>A 0.0193
B 0.0193%
C 0.0705
D 0.0705%</p> <p>5 An amount of \$27 800 was invested for 15 months with simple interest and grew to \$29 600. Calculate the monthly interest rate.</p> <p>A 4.31%
B 0.52%
C 5.18%
D 0.43%</p> |
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- | | |
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| <p>6 Which expression gives the future value of a property in 2024 if it was purchased for \$55 000 in 1987 and its value has increased by 5.6% p.a. since then?</p> <p>A $55\,000(1.056)^{37}$
B $55\,000(1.0056)^{37}$
C $55\,000(1.56)^{37}$
D $55\,000 \times 1.056 \times 37$</p> <p>7 \$9400 is invested for 5 years at 6.2% p.a. compounded half-yearly. Calculate the interest earned.</p> <p>A \$3298.44
B \$1550.18
C \$3472
D \$3356</p> <p>8 What present value must be invested for 6 years at 3.6% p.a. compounded quarterly to grow to a future value of \$14 000?</p> <p>A \$11 323.21
B \$5990.93
C \$11 291.20
D \$13 267.25</p> <p>9 A children's book cost \$19.95 in 1992. Calculate its price in 2020 if the inflation rate is a constant 2.1% p.a. during this time.</p> <p>A \$27.86
B \$34.97
C \$35.70
D \$36.45</p> | <p>10 A textbook today costs \$75. What was its price 11 years ago if the inflation rate over this period was 2.9% p.a.?</p> <p>A \$51.90
B \$54.76
C \$57.64
D \$58.30</p> <p>11 A \$15 300 comic book collection appreciated by 4.4% p.a. for 9 years. By how much did its value increase?</p> <p>A \$6292.13
B \$7242.18
C \$8251.18
D \$22 542.18</p> <p>12 Land valued at \$121 000 two years ago appreciated at a rate of 3.45% p.a. Calculate its current value, correct to the nearest \$100.</p> <p>A \$129 500
B \$129 600
C \$129 700
D \$129 400</p> <p>13 Zoe bought 280 shares at \$35.60 each. The dividend yield was 6%. What was the total dividend earned?</p> <p>A \$589.08
B \$594.72
C \$596.40
D \$598.08</p> |
|--|---|

- 14 Ankit had 150 shares valued at \$9300 and received a dividend of \$1.08 per share. What was the dividend yield?
- A 1.74%
 B 1.71%
 C 1.8%
 D 1.9%
- 15 A car purchased for \$34 000 in 2019 depreciates by \$4650 each year. In which year will the car be worth \$15 400?
- A 2022
 B 2023
 C 2024
 D 2025
- 16 The value V of some office equipment after n years is given by $V = 24\,000 - 1800n$. By how much does the equipment depreciate in a 3-year period?
- A \$18 600
 B \$5200
 C \$5400
 D \$5600
- 17 After how many years will the office equipment mentioned above be worth 40% of its initial value?
- A 5 years 4 months
 B 6 years
 C 7 years
 D 8 years
- 18 A hay baler costs \$203 000 and depreciates at 24% p.a. What is its value 4 years after purchase?
- A \$8120
 B \$64 625
 C \$67 725
 D \$135 275
- 19 A commercial pizza oven is valued at \$12 800, 5 years after purchase. If depreciation is 21% p.a., what was the purchase price of the oven?
- A \$22 600
 B \$33 400
 C \$41 500
 D \$41 600
- 20 A computer costing \$6000 depreciates at 28% p.a. Which is the correct calculation for the amount of depreciation in the 3rd year?
- A $6000(0.72)^4 \times 6000(0.72)^3$
 B $6000(0.72)^3 \times 6000(0.72)^2$
 C $6000(0.28)^4 \times 6000(0.28)^3$
 D $6000(0.28)^3 \times 6000(0.28)^2$

Part B

9 free-response questions
 30 marks

Show your working where appropriate.

- 21 Jaxsen borrowed \$3400 over 3 years at 11.4% p.a. simple interest to buy a drone.
- a How much interest does Jaxsen have to pay?

- b What amount does he pay altogether?

- c What is his monthly repayment?

- [3 marks]**
- 22 Solve this equation correct to 1 decimal place: $5460(1.019)^n = 8190$
- _____
- _____
- _____
- [1 marks]**
- 23 \$44 000 is invested for 10 years at 2.6% p.a. compounded weekly. Find:
- a the future value

- b the interest earned

- [3 marks]**
- 24 Ken invested \$17 200 in an account that grew to \$19 780 after 3 years. The interest was compounded monthly. Find the annual interest rate, correct to 1 decimal place.
- _____
- [2 marks]**

25 Freya bought 2000 shares at \$6.50 per share, with a dividend yield of 5.2%. One year later, she sold the shares for \$11.40 per share. Her stockbroker charges brokerage of 1.5% for buying and 1% for selling.

a What was the total cost to Freya of purchasing her shares?

b Calculate Freya's total earnings over the year, after costs.

[4 marks]

26 Use this share table to find:

Share table for NCM Mining

High (12-month period)	\$85.43
Low (12-month period)	\$51.73
Last sale	\$65.40
Move (cents, from previous day)	-95
Buy	\$63.75
Sell	\$62.80
Dividend yield	2.46%

a the market price of NCM Mining shares. _____

b the price of the shares the day before. _____

c the dividend, if paid that day, to the nearest cent.

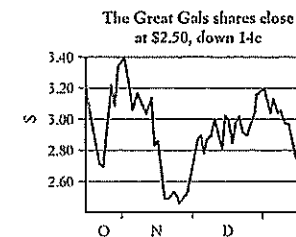
d the difference between the market price and the maximum price in the last 12 months.

e the range of share prices for the 12-month period.

f the percentage change in the value of NCM Mining shares from the previous day.

[6 marks]

27 This graph shows the prices of Great Gals shares over a 3-month period, from mid-October to mid-January.



a What was the lowest share price (correct to the nearest 5 cents)?

b How many times was the price \$2.70?

c What was the range of share prices?

d Estimate the share price on 30 November.

e In which month was the highest share price reached?

[5 marks]

28 A printing press cost \$20 000 and depreciated by \$1500 each year.

a Complete this depreciation schedule for the printing press.

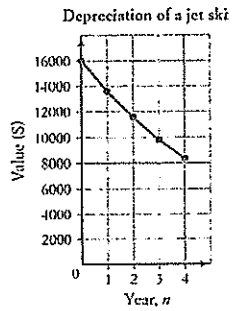
Year	Accumulated depreciation (\$)	Value at the end of the year (\$)
0	0	20 000
1		
2		
3		

b Write down the equation for the value of the printing press after n years.

c What percentage of its purchase price has the vehicle retained after 4 years?

[3 marks]

29 A jet ski purchased for \$16 000 depreciates according to the declining-balance method.



Year	Value (\$)
0	16 000
1	13 600
2	11 560
3	9826
4	8352

- a Find the annual depreciation rate as a percentage, correct to the nearest whole number.
-
- b Use the formula to find the value of the jet ski, to the nearest dollar, after 5 years.
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[3 marks]

This is the end of the test.

Use the back of the page for extra working space.

Answers

Part A

- 1 B 2 C 3 A 4 B 5 D
 6 A 7 D 8 C 9 C 10 B
 11 B 12 A 13 D 14 A 15 B
 16 C 17 D 18 C 19 D 20 B

Part B

- 21 a \$1162.80 b \$4562.80 c \$126.75
 22 21.5
 23 a \$57 061.22 b \$13 061.22
 24 4.7% p.a.
 25 a \$13 195 b \$10 053
 26 a \$65.40 b \$66.35 c \$1.61 d \$20.03 e \$33.70 f 1.43%
 27 a \$2.45 b 4 c \$0.95 d \$2.70 e November
 28 a \$0 \$20 000 b $V = 20\,000 - 1500n$ c 70%
 \$1500 \$18 500
 \$3000 \$17 000
 \$4500 \$15 500
 29 a 15% b \$7099