



Year 10 Mathematics

End Term 3

27 marks

45 mins

Date

Instructions: 1. Answer all questions 2. Calculators permitted

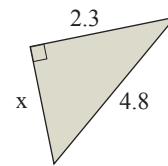
Question 1 (8 marks)

- a) Find the simple interest charged on \$50 000 borrowed for 3 years at 8.5% pa. (1)
- b) How much would need to be invested at 6.5% pa for 6 months in order to earn \$500 interest (6 months = 0.5 years)? (1)
- c) \$25 500 is invested at 5.3% pa compounded yearly.
What will be the principal after 4 years (round to the nearest dollar)? (2)
- d) Which produces the better outcome over 5 years?
i) \$100 000 invested at 9% pa compounded yearly? (2)
ii) \$100 000 invested at 9% pa compounded monthly? (2)
- e) A car is purchased for \$35 000. What is the value of the car after 5 years if it depreciates in value by 10% each year (round to nearest \$1000)? (2)

Sample 1

Question 2 (12 marks)

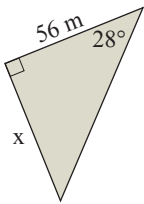
- a) Use Pythagoras' theorem to find the length of the unknown side (round to two decimal places):



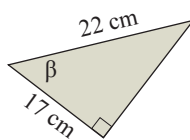
(2)

- b) Use the sin, cos, or tan ratio to find the unknown (round to two decimal places):

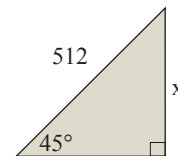
i)



ii)

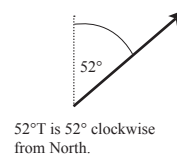


iii)



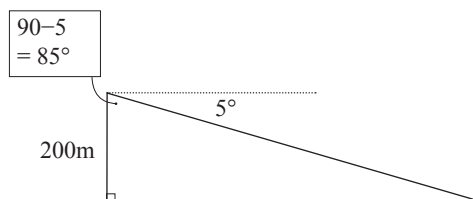
(2 each)

- c) A plane flies due west for 126 km, then on a bearing of 52°T until the plane is due north of its starting point.
How far is the plane from its starting point?

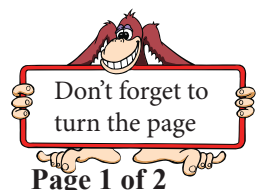


(2)

- d) From the top of a 200 m tower, the angle of depression to a fire is 5° .
How far away is the fire?



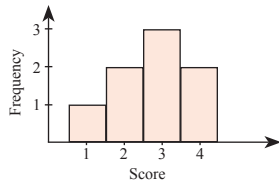
(2)



Question 3 (7 marks)

a) Find the mode, median, and the mean of each of the following:

i)



ii)

Score	Frequency
1	1
2	4
3	2
4	1

(2 each)

b) Year 10 students were tested on their box plot knowledge before and after a week of inclass learning about box plots. Use box plots to represent and then compare each data set.

Before learning	After learning
44, 70, 70, 43, 42, 56, 45, 56, 58, 40, 40, 64, 43, 57, 55, 56, 51, 47, 70, 58, 44	80, 90, 88, 81, 86, 67, 75, 70, 85, 77, 76, 70, 82, 88, 90, 69, 79, 85, 90, 65, 81

(3)

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Did you find your
silly mistakes?





Year 10 Mathematics

End Term 3

27 marks

45 mins

Date

Instructions: 1. Answer all questions 2. Calculators permitted

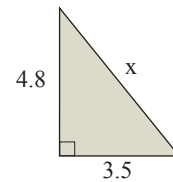
Question 1 (8 marks)

- a) Find the simple interest charged on \$50 000 borrowed for 3 years at 7.5% pa. (1)
- b) How much would need to be invested at 4.5% pa for 6 months in order to earn \$1000 interest (6 months = 0.5 years)? (1)
- c) \$250 000 is invested at 4.9% pa compounded yearly.
What will be the principal after 4 years (round to the nearest dollar)? (2)
- d) Which produces the better outcome over 5 years?
i) \$100 000 invested at 8% pa compounded yearly? (2)
ii) \$100 000 invested at 8% pa compounded monthly? (2)
- e) A car is purchased for \$24 000. What is the value of the car after 5 years if it depreciates in value by 10% each year (round to nearest \$1000)? (2)

Sample 2

Question 2 (12 marks)

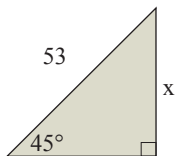
- a) Use Pythagoras' theorem to find the length of the unknown side (round to two decimal places):



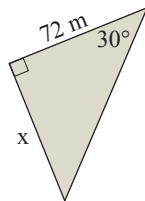
(2)

- b) Use the sin, cos, or tan ratio to find the unknown (round to two decimal places):

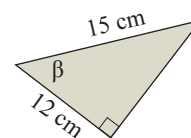
i)



ii)

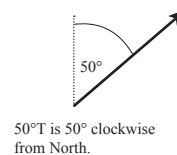


iii)



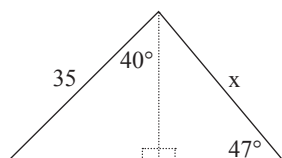
(2 each)

- c) A plane flies due west for 91 km, then on a bearing of 50°T until the plane is due north of its starting point.
How far is the plane from its starting point?

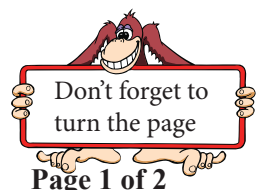


(2)

- d) Find the unknown in the diagram.



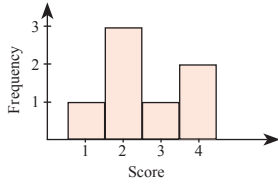
(2)



Question 3 (7 marks)

a) Find the mode, median, and the mean of each of the following:

i)



ii)

Score	Frequency
2	1
3	4
4	2
5	2

(2 each)

b) Depression affected patients were asked to self-rate their state of depression before and after treatment. Use box plots to represent and then compare each data set.

Before treatment	After treatment
20, 23, 22, 19, 17, 15, 26, 15,	19, 17, 14, 23, 19, 19, 20, 20,
22, 26, 17, 24, 30, 22, 20, 23,	21, 23, 25, 14, 13, 15, 19, 21,
22, 26, 26, 27, 29, 20, 25, 30	23, 23, 18, 16, 17, 13, 14, 20

(3)

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Did you find your silly mistakes?

