

HSC General Mathematics

Assignment 2

To be completed on A4 paper
Full working out must be shown

DUE: 28 Feb

- 1) Jane uses 344 gas units during a certain quarter. One gas unit is equal to 39.4652 megajoules (MJ). She is charged at 1.0595c per MJ plus a supply fee of \$25.78.
 - a) How many megajoules (MJ) of gas did she use?
 - b) How much is her gas bill?
- 2) Calculate the compound interest on \$15000 invested at 6% p.a. for 8 years if the interest is compounded quarterly.
- 3) Anita wishes to buy 3000 shares in an oil company. The market price of the shares is \$3.78 each.
 - a) Calculate the total cost of the shares.
 - b) Anita also has to pay various fees. The stockbroker charges a basic order fee of \$12 plus a commission of 2.5% of the cost of the shares. Find the total fee the stockbroker will charge.
 - c) The State Government levies stamp duty on the cost of the shares. The rate is 50 cents per \$100 or part thereof. Calculate the stamp duty on the shares.
 - d) Soon after she bought the shares, a dividend of 31 cents per share was paid. The market price of the share was then \$4.25. Calculate the percentage yield of the shares.

$$\text{(Yield \% = } \frac{\text{Dividend in cents per share} \times 100}{\text{Market price in cents per share}} \text{)}$$

- 4) Find the median from the following set of scores

Score	Frequency
1	3
2	4
3	3
4	10

- 5) A ladder is placed against a wall such that it just reaches the top of the wall. The foot of the ladder is 1.5 metres away from the wall and the ladder is inclined at an angle of 71° with the ground. Find the height of the wall correct to 2 decimal places.
- 6) A raffle has 8 tickets numbered 1 to 8 and 8 prizes. The tickets are drawn one at a time without replacement. What is the probability that the tickets will be drawn in the order 1, 2, 3, 4, 5, 6, 7, 8?
- 7) If a standard cubic die is rolled 72 times, it is most likely that the number '4' would be shown
- (a) 4 times (b) 6 times (c) 12 times (d) 24 times
- 8) A man has five pairs of socks in a drawer, each pair a different colour. If he selects two socks randomly, what is the probability that they are a matching pair?
- 9) A basketball team of 5 players is to be selected from a squad of 9 players.
- a) How many different teams are possible?
- b) If the players were selected at random, what is the probability of a particular player being selected in the team?
- 10) The following scores were obtained in a class spelling test:
- ~~5, 8, 4, 7, 8, 6, 8, 7, 6, 4, 6, 9, 7, 9, 5, 5~~
- What is the upper quartile?

