

SECTION A(1) (33 marks)**Answer ALL questions in this section and write your answers in the spaces provided.**

1. Make a the subject of the formula $P = ab + 2bc + 3ac$. (3 marks)

2. Simplify $\frac{(x^3y)^2}{y^5}$ and express your answer with positive indices. (3 marks)

3. Factorize
- (a) $4x^2 - 4xy + y^2$,
- (b) $4x^2 - 4xy + y^2 - 2x + y$. (3 marks)

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11.

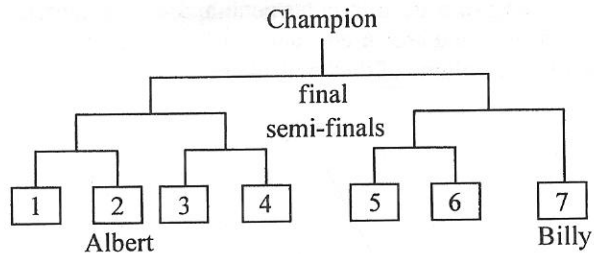


Figure 3

Seven players take part in a men's singles tennis knock-out tournament. They are randomly assigned to the positions 1, 2, 3, 4, 5, 6 and 7. It is known that Albert and Billy are in positions 2 and 7 respectively. The winner of each game proceeds to the next round as shown in Figure 3 and the loser is knocked out. Billy goes straight to the semi-finals. In each game, each player has an equal chance of beating his opponent.

- (a) Write down the probability that Albert will reach the semi-finals. (1 mark)

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- (b) Find the probability that Albert will be the champion. (2 marks)

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- (c) Find the probability that Albert will fail to reach the final. (3 marks)

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- (d) Find the probability that Albert will play against Billy in the final. (2 marks)

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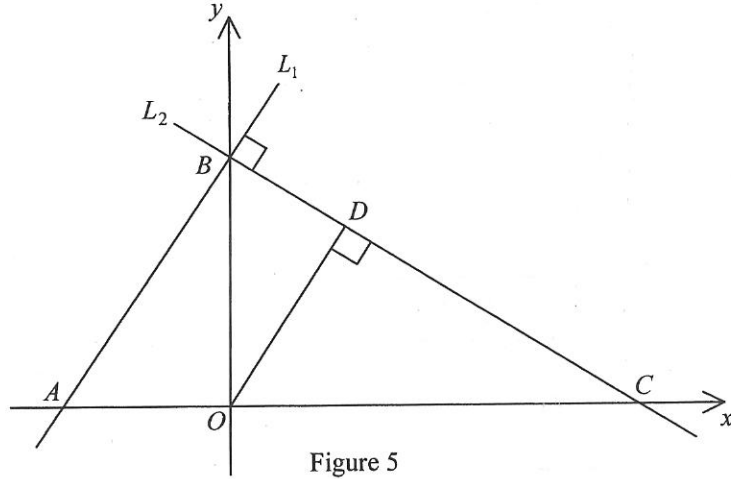
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13. In Figure 5, the straight line $L_1 : 2x - y + 4 = 0$ cuts the x -axis and the y -axis at A and B respectively. The straight line L_2 , passing through B and perpendicular to L_1 , cuts the x -axis at C . From the origin O , a straight line perpendicular to L_2 is drawn to meet L_2 at D .



- (a) Write down the coordinates of A and B . (2 marks)

- (b) Find the equation of L_2 . (3 marks)
