Year 10 Mathematics

End Term 2

25 marks

45 mins

Date

Instructions: 1. Answer all questions 2. Calculators permitted

Question 1 (9 marks - 1 mark each)

a) Simplify each of the following:

i) $(x + 2)(x + 1)$ **ii)** $(x + 1)(x - 3)$ **iii)** $(x - 3)(x - 2)$

b) Factorise each of the following:

i) $x^2 + 3x + 2$ **ii)** $x^2 + 3x - 10$ **iii)** $x^2 - 5x + 6$

c) Solve each of the following quadratics:

i) $x^2 + 5x + 6 = 0$ **ii)** $x^2 - 2x - 15 = 0$ **iii)** $x^2 - 10x + 1 = 0$

Question 2 (9 marks)

a) Solve each of the following quadratics:

i) $2(x - 1) = 6$ **ii)** $4(3x + 1) = 28$ **iii)** $\frac{x}{2} + \frac{x}{3} = 2$ (1 each)

b) Solve each of the following quadratics:

i) $x^2 + 4x + 4 = 0$ **ii)** $x^2 + 3x + 2 = 0$ **iii)** $x^2 - 5x - 1 = 0$ (2 each)

Question 3 (7 marks - 1 mark each)

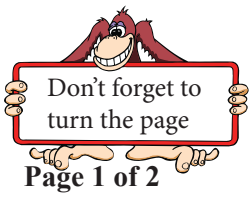
a) A bag contains 2 red balls and a white ball. A ball is withdrawn, the colour noted, and replaced back in the bag. A second ball is then drawn. Find the probability of drawing:

i) 2 white balls one after the other

ii) A red and then a white

iii) A white and then a red

iv) 2 whites or 2 reds.



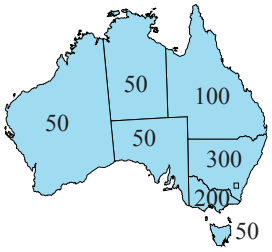
Question 3 Continued

b) The hospital data showed that of the 80 patients, 27 patients had the A antigen, 19 had the B antigen. 9 patients had both the A and B antigens.
Find the probability that:

i) a patient had the B antigen only

ii) a patient had no antigen (ie., neither the A nor B antigen)

iii) a patient had no A antigen given that the patient had B Antigen.



Population of Australian States	
NSW	7 200 000
Vic	5 600 000
Qld	4 500 000
WA	2 300 000
SA	1 600 000
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Did you find your silly mistakes?

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Instructions: 1. Answer all questions 2. Calculators permitted

Question 1 (9 marks - 1 mark each)

a) Simplify each of the following:

i) $(x + 1)(x + 2)$ **ii)** $(x + 2)(x - 1)$ **iii)** $(x - 3)(x - 4)$

b) Factorise each of the following:

i) $x^2 + 5x + 6$ **ii)** $x^2 + 2x - 8$ **iii)** $x^2 - 4x - 12$

c) Solve each of the following quadratics:

i) $x^2 + 2x + 1 = 0$ **ii)** $x^2 - 5x + 4 = 0$ **iii)** $x^2 - x - 12 = 0$

Question 2 (9 marks)

a) Solve each of the following quadratics:

i) $2(x - 1) = 10$ **ii)** $7x - 7 = 2x + 3$ **iii)** $\frac{3x-1}{4} = 5$ (1 each)

b) Solve each of the following quadratics:

i) $x^2 + 6x + 9 = 0$ **ii)** $x^2 + 6x + 5 = 0$ **iii)** $x^2 - 13x + 12 = 0$ (2 each)

Question 3 (7 marks - 1 mark each)

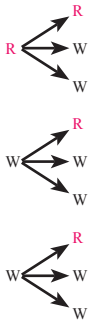
a) A bag contains 2 white balls and a red ball. A ball is withdrawn, the colour noted, and replaced back in the bag. A second ball is then drawn. Find the probability of drawing:

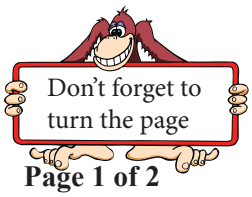
i) 2 white balls one after the other

ii) 2 red balls one after the other

iii) a red and then a white

iv) at least 1 red ball.





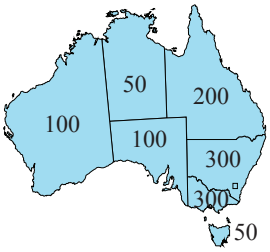
Question 3 Continued

b) The hospital data showed that of the 45 patients, 21 patients had the A antigen, 16 had the B antigen. 8 patients had both the A and B antigens.
Find the probability that:

i) a patient had the B antigen only

ii) a patient had no antigen (ie., neither the A nor B antigen)

iii) a patient had no A antigen given that the patient had B Antigen.



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