1 Solve $2x^2 + 3x - 2 > 0$

....

(Total for Question 1 is 3 marks)

1 Solve $2x^2 + 3x - 2 > 0$

2 n is an integer such that $3n + 2 \leqslant 14$ and $\dfrac{6n}{n^2 + 5} > 1$

Find all the possible values of n.

....

(Total for Question 2 is 5 marks)

3 (a) Show that $(2x + 1)(x + 3)(3x + 7)$ can be written in the form $ax^3 + bx^2 + cx + d$
   where a, b, c and d are integers.
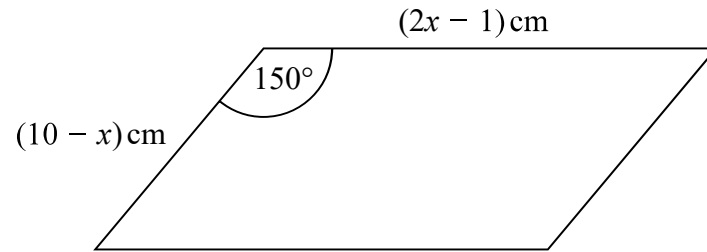
(3)

(b) Solve $\qquad (1 - x)^2 < \dfrac{9}{25}$

(3)

(Total for Question 3 is 6 marks)

4 Solve $22 < \dfrac{m^2 + 7}{4} < 32$

Show all your working.

....

4 Solve $22 < \dfrac{m^2 + 7}{4} < 32$

(Total for Question 4 is 5 marks)

5 The diagram shows a parallelogram.

$(2x - 1)$ cm

$150°$

$(10 - x)$ cm

The area of the parallelogram is greater than 15 cm^2

(a) Show that $2x^2 - 21x + 40 < 0$

(3)

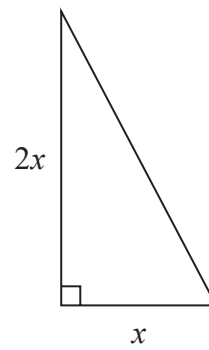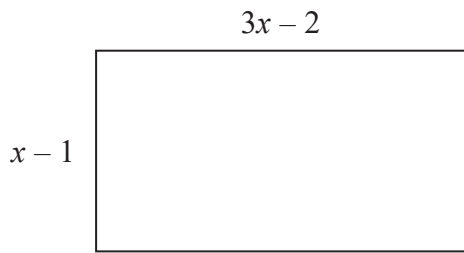(b) Find the range of possible values of x.

(3)

(Total for Question 5 is 6 marks)

6 Find algebraically the set of values of x for which

$$x^2 - 49 > 0 \quad \textbf{and} \quad 5x^2 - 31x - 72 > 0$$

(Total for Question 6 is 5 marks)

$$x^2 - 49 > 0 \quad \textbf{and} \quad 5x^2 - 31x - 72 > 0$$

7 Here is a rectangle and a right-angled triangle.

$3x - 2$

$x - 1$

$2x$

x

All measurements are in centimetres.
The area of the rectangle is greater than the area of the triangle.

Find the set of possible values of x.

....

(Total for Question 7 is 5 marks)