

1 (a) Solve the inequality $2x + 7 > 4$

.....
(2)

(b) Solve $x^2 - 3x - 40 < 0$
Show clear algebraic working.

.....
(3)

(Total for Question 1 is 5 marks)

2 (a) Solve the inequality $5x + 9 > 14$

.....
(2)

(b) Solve the inequality $5y^2 - 17y \leq 40$

.....
(3)

(Total for Question 2 is 5 marks)

3 (a) Solve the inequality $3x + 17 < 9x + 2$

.....
(2)

(b) Solve the inequality $2y^2 - 7y - 30 \leq 0$
Show your working clearly.

.....
(3)

.....
(Total for Question 3 is 5 marks)

4 Solve the inequality $4x^2 - 5x - 6 > 0$

.....
(Total for Question 4 is 4 marks)

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

Show all your working.

(Total for Question 5 is 5 marks)

6

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

Find all the possible values of n .

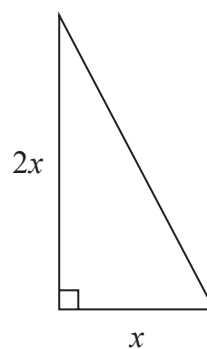
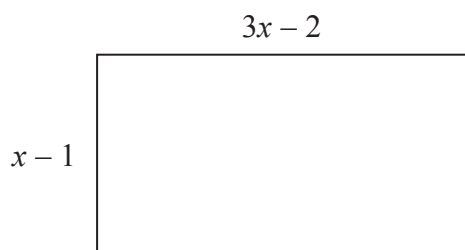
(Total for Question 6 is 5 marks)

7 Find algebraically the set of values of x for which

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

(Total for Question 7 is 5 marks)

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



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 8 is 5 marks)

9 Here is a rectangle.

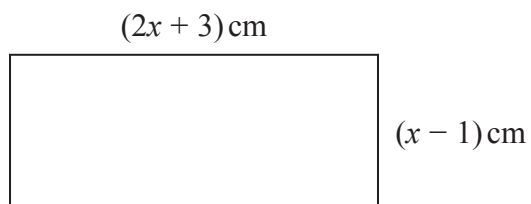


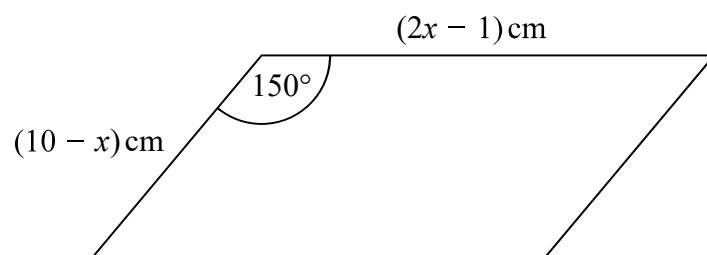
Diagram **NOT**
accurately drawn

Given that the area of the rectangle is less than 75 cm^2

find the range of possible values of x

(Total for Question 9 is 5 marks)

10 The diagram shows a parallelogram.



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

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

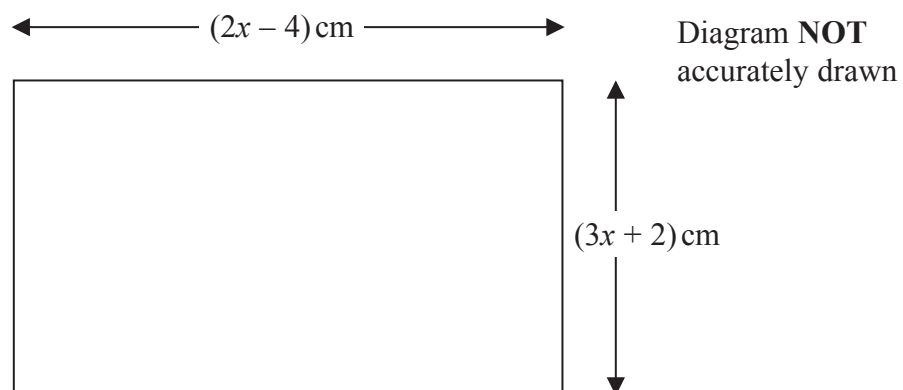
(3)

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

(3)

(Total for Question 10 is 6 marks)

11 The diagram shows a rectangle.



The area of the rectangle is $A \text{ cm}^2$

Given that $A < 3x + 27$

find the range of possible values for x .

(Total for Question 11 is 5 marks)