1 Write the following in the form $(x + a)^2 + b$ where a and b are integers:

1(a) $x^2 + 4x + 5$

[2 marks]

Answer _____

1(b) $x^2 - 14x - 1$

[2 marks]

Answer _____

1(c) $x^2 - 24x + 5$

[2 marks]

Answer _____

Turn over for next question

6

2 Write the following in the form $(x + a)^2 + b$ where a and b are integers:

2(a) $x^2 + 10x + 8$

[2 marks]

Answer _____

2(b) $x^2 - 4x + 1\,6$

[2 marks]

Answer _____

2(c) $x^2 - 8x + 14$

[2 marks]

Answer _____

Turn over for next question

6

3 Write the following in the form $(x + a)^2 + b$ where a and b are integers:

3(a) $x^2 + 6x + 20$

[2 marks]

Answer _____

3(b) $x^2 + 12x - 8$

[2 marks]

Answer _____

3(c) $x^2 - 2x - 6$

[2 marks]

Answer _____

Turn over for next question

6

4 A rectangle has sides of x and $(x - 2)$ cm

The area of the rectangle is 3 cm^2

Not drawn accurately

4(a) Show that $(x - 1)^2 - 4 = 0$

[3 marks]

Answer _____

4(b) Hence, or otherwise, find the perimeter of the rectangle.

[3 marks]

Answer _____

Turn over for next question

6

5 Bob adds a number, that is larger than 1, to its reciprocal.

His answer is 4.

Find Bob's number in the form $a \pm \sqrt{b}$

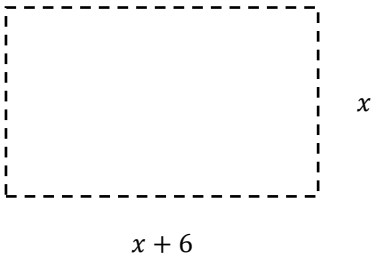
[5 marks]

Answer _____

5

6 A small farmers field is shown below.

Not drawn accurately



Given that the area of the field is $36\ \text{m}^2$

Find the perimeter of the field in meters.

Give your answer in the form $a\sqrt{5}$ where a is an integer.

[6 marks]

Answer _____

End of Questions

6

END