

**Test****Time Allowed: 35 minutes****Total Marks: 33**

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**Show all steps of your working. Answers with no working will be given no marks.**

1.

- (a) Expand the brackets and simplify:

$$(2 - 3\sqrt{3})(5 - 2\sqrt{3})$$

Show all steps of your working. Answers with no steps of working will be given no marks.

(2 marks)

- (b) Rationalise the denominator:

$$\frac{2}{4 + \sqrt{7}}$$

(2 marks)

2. Solve the following equations **by factorising**.

**Answers without any factorisation will be given no marks.**

(a)  $y^2 - 7y = 0$

.....  
(2)

(b)  $3x^2 + 7x - 6 = 0$

.....  
(3)

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3. Solve using **any method**, leaving your answers correct to 1 decimal place where necessary.

**Answers without clear steps will be given no marks.**

(a)  $3x(x - 1) + 8 = x(2x + 3)$

.....  
(3)

(b)  $x^2 - 6x - 2 = 0$

(c)  $x^4 - 7x^2 + 10 = 0$

.....  
(3)

.....  
(4)

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4.

(a) Given that

$$x : y = 5 : 2 \text{ and}$$

$z$  is 30% of  $x$ ,

find the ratio  $y : z$ .

(3 marks)

(b) Given that,

$$80\% \text{ of } a = 30\% \text{ of } b$$

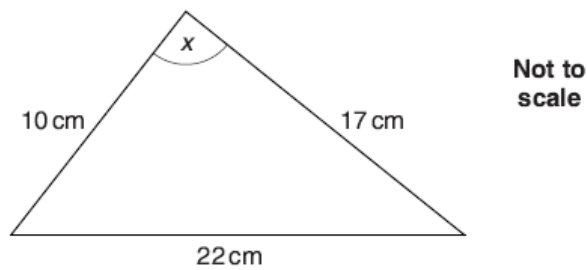
find  $b$  as a percentage of  $a$ .

(3 marks)

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5.

Elaine has this triangular piece of material.

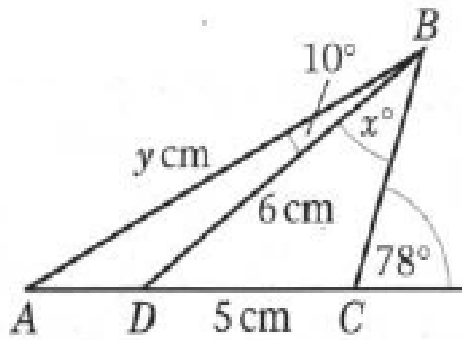


Calculate the size of the angle marked  $x$ .

(3 marks)

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6. Calculate the size of the angle marked  $x$  and the length marked  $y$  in the diagram given below.  
Note that  $CD = 5\text{cm}$  and  $BD = 6\text{cm}$ .



(5 marks)

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**- End of Test -**

