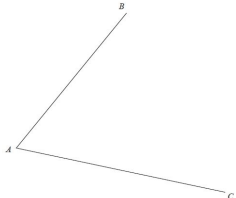


Q1. Using ruler and compasses only, construct the bisector of angle BAC
You must show all your construction lines.



Triangle ABC is an equilateral triangle of side 4 cm. Using a ruler and compasses only, construct triangle ABC You must show all your construction lines.

Don't worry if
you draw over
the text, or if
you prefer, do
this on a
different sheet.

(Total for question = 4 marks)

Q2. Here are the first five terms of a number sequence.

7 11 15 19 23

(a) Find an expression, in terms of n , for the n th term of this sequence.

..... (2)

The n th term of a different number sequence is given by $80 - 2n$

(b) Write down the first 3 terms of this sequence.

.....,, (2)

Yuen says there are no numbers that are in both of the sequences. Yuen is correct.

(c) Explain why.

.....
..... (1)

(Total for question = 5 marks)

Q3.

Work out the value of x .

Give your answer correct to 3 significant figures.

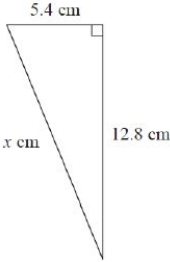


Diagram NOT
accurately drawn

$x =$

(Total for question = 3 marks)

Q4.Here are a rectangle and a square.



Diagram NOT
accurately drawn

The rectangle has length 8 cm and area 48 cm^2
The perimeter of the square is the same as the perimeter of the rectangle.

Calculate the area of the square.

..... cm^2

(Total for question = 4 marks)

Q5. Here are the points that Carmelo scored in his last 11 basketball games.

23 20 14 23 17 24 24 18 16 22 21

(a) Find the interquartile range of these points.

..... (3)

Kobe also plays basketball. The median number of points Kobe has scored in his games is 18.5 The interquartile range of these points is 10

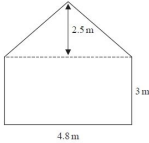
(b) Which of Carmelo or Kobe is the more consistent points scorer?

Give a reason for your
answer.....

..... (1)

(Total for Question is 4 marks)

Q6.Here is a floor plan of a stage. The plan is formed from a triangle and a rectangle.



The stage manager is going to paint the floor. One tin of paint covers an area of 1.8 m^2 One tin of paint costs \$16.40 Paint can only be bought in full tins. The stage manager has \$190 to spend. Does the stage manager have enough money to buy enough tins to paint all of the floor? Show your working clearly.

(Total for question = 5 marks)

ANSWER ALL QUESTIONS, MAKE SURE YOU SHOW ALL WORKING OTHERWISE YOU WILL NOT BE AWARDED MARKS. IF YOU WRITE ON ANY OTHER PAPER, PLEASE HAND THIS IN WITH THE SHEET.

Q	Working	Answer	Mark	Notes
		Fully correct angle bisector with all relevant arcs shown	2	B2 for a fully correct angle bisector with all relevant arcs shown If not B2 then B1 for all arcs and no angle bisector drawn or for a correct angle bisector within the guidelines but no correct arcs or insufficient correct arcs
Total 2 marks				

Q	Working	Answer	Mark	Notes
		Correct triangle	2	B2 For a fully correct triangle with arcs shown (B1 for a correctly sized triangle with no arcs shown or for an incorrectly sized triangle with arcs shown where $AC = BC$ or correct arcs not joined) (overlay required)
Total 2 marks				

Question	Working	Answer	Mark	Notes
	$48 \div 8 (=6)$			M1 width of rectangle
	$(8 + "6") \times 2 (=28)$			M1 perimeter
	$"28" \div 4 (=7)$			M1 length of side
		49	4	A1
Total 4 marks				

Q	Working	Answer	Mark	Notes
(a)		$4n + 3$	2	B2 B1 for $4n + x$ where x is any integer
(b)		78, 76, 74	2	B2 B1 for one correct term
(c)		Correct reason	1	B1 The first sequence is only odd numbers and the second is only even numbers
Total 5 marks				

Question	Working	Answer	Mark	Notes
(a)	14 16 17 18 20 21 22 23 23 24 24			M1 arrange in order or One of 21(median), 17(LQ), 23(UQ) identified
	(14 16 17 18 20 21 22 23 23 24 24) (14 16 17 18 20) and (22 23 23 24 24) 23 - 17			M1 Identify any two of 21, 17 and 23
		6	3	A1 cao
(b)		Carmelo and reason using IQR	2	B1 fit from (a) Carmelo - he has a lower IQR oe (IQR must be part of the statement)
Total 5 marks				

Question	Working	Answer	Mark	Notes
	$5.4^2 + 12.8^2 (=193)$		3	M1
	$\sqrt{5.4^2 + 12.8^2}$ or $\sqrt{193}$ (=13.89244399)			M1 dep
		13.9		A1 awrt 13.9
Total 3 marks				

Q	Working	Answer	Mark	Notes
	$\frac{1}{2} \times 4.8 \times 2.5 (=6)$ oe or $\frac{3}{2} \times 4.8 (=14.4)$ oe or $4.8 \times (3 + 2.5) (=26.4)$		5	M1
	$\frac{1}{2} \times 4.8 \times 2.5 (=6)$ oe and $3 \times 4.8 (=14.4)$ oe or $[4.8 \times (3 + 2.5)] - [0.5 \times 2.4 \times 2.5 + 0.5 \times 2.4 \times 2.5]$ or $"26.4" - 6 (=20.4)$ or			M1
	$("6" + "14.4") \div 1.8 (=11.3...)$ or $"20.4" \div 1.8 (=11.3...)$ or $"6" + "8" \div (3.3... + 8 = 11.3...)$ or $1.8 \div 1.8$			M1 dep on M1 for a method to find the number of tins for their area
	$"12" \times 16.4(0) (=196.8(0))$ or $190 \div 16.4 (=11.58...)$ and $"12"$			M1 dep on previous M1 for a method to calculate the cost for their number of tins (their number of tins must be rounded up to the next integer) or the number of tins that can be bought compared with their number of tins
	Working required	No and 196.8(0) or 11.58 and 12 seen		A1 dep on M2
				SC B1 for $190 \div 16.4(0)$ if M0 scored
Total 5 marks				