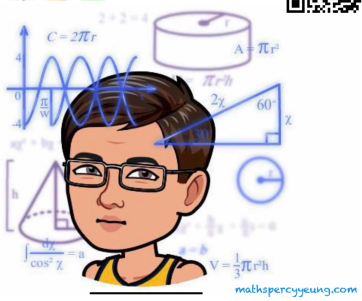


2018 – 2019

S.3 Mathematics Chapter Test 4

Special Lines and Centres in a Triangle

Question-Answer Book

Date: 2 – 11 – 2018
Duration: 30 mins
This paper must be answered in English

Instructions :

1. Write your name, class and class number in the spaces provided on this cover.
2. Answer ALL questions in this paper. Write your answers in the spaces provided in this Question-Answer Book.
3. Write your answers with black or blue ball-pens, and draw graphs or figures with HB pencils.
4. Unless otherwise specified, all working must be clearly shown.
5. **Unless otherwise specified, numerical answers should be either exact or correct to 3 significant figures.**
6. The diagrams in this paper are not necessarily drawn to scale.

Section A :
Multiple Choice Question

Question	Full marks	Score
1 – 5	10	
Section A Total	**10**	

Section B :
Conventional Question

Question	Full marks	Score
6	4	
7	4	
8	5	
9	3	
Section B Total	**16**	

Section C :
Bonus Question

Question	Full marks	Score
10	3	
Section C Total	**3**	

Paper Total	26	

Section A : Multiple Choices Questions (10 marks)

Fill in the best answer in each question.

1	2	3	4	5

1. Which of the following sets of line segments CANNOT form a triangle?

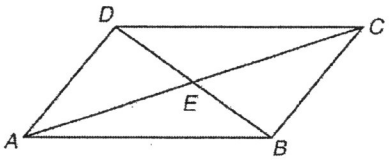
   A. 6 cm, 6 cm, 6 cm

   B. 9 cm, 12 cm, 15 cm

   C. 11 cm, 7.7 cm, 5.5 cm

   D. 27 cm, 8 cm, 15 cm

2. In the figure, AEC and BED are straight lines, and $\triangle ADE \cong \triangle CBE$. Which of the following must be true?



   A. DE is an altitude of $\triangle ADC$.

   B. DE is the angle bisector of $\angle ADC$.

   C. BE is a median of $\triangle ACB$.

   D. BE is the perpendicular bisector of AC.

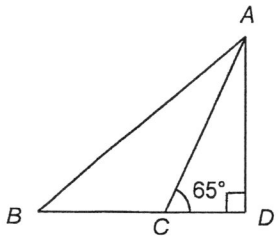
3. In the figure, AD is an altitude of $\triangle ABC$ and AC is an angle bisector of $\triangle ABD$. Find $\angle ABD$.

   A. 25°

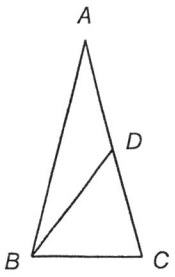
   B. 40°

   C. 50°

   D. 65°



4. In the figure, BD is a median of $\triangle ABC$ and $AB = AC = 2BC$. If the perimeter of $\triangle ABC$ is 15 cm, find the length of CD.



A. 1.5 cm

B. 2 cm

C. 3 cm

D. 5 cm

5. Which of the following centres may lie outside a triangle?

I. Circumcentre

II. Incentre

III. Orthocentre

IV. Centroid

A. I and III only

B. I and IV only

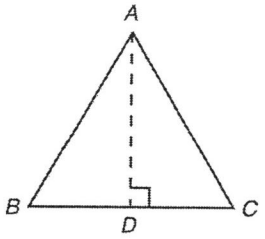
C. II and III only

D. III and IV only

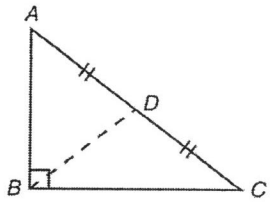
Section B : Conventional Questions (17 marks)

6. In each of the following triangles, write down the name of the dotted line. (4 marks)

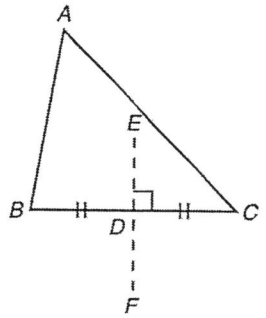
angle bisector	altitude	median	perpendicular bisector



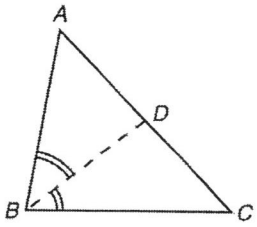
(a) AD is the _____ of $\triangle ABC$.



(b) BD is the _____ of $\triangle ABC$.



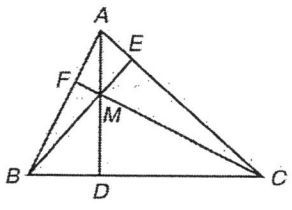
(c) EF is the _____ of BC in $\triangle ABC$.



(d) BD is the _____ of $\angle ABC$ in $\triangle ABC$.

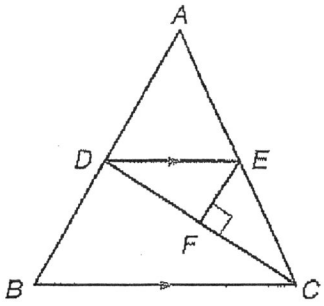
7. In each of the following triangles, write down the name of the centres. (4 marks)

incentre	orthocentre	centroid	circumcentre



In the figure, AD, BE and CF are three altitudes of $\triangle ABC$. If they intersect at M, then M is the _____

Section C : Bonus Questions (3 marks)



10. In the figure, D and E are the points on AB and AC respectively such that $DE//BC$. F is the mid-point of DC and $EF \perp DC$.

(a) Prove that $\triangle DEF \cong \triangle CEF$. (2 marks)

(b) Is DC the angle bisector of $\angle ACB$? Explain your answer. (1 marks)

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