MATHS

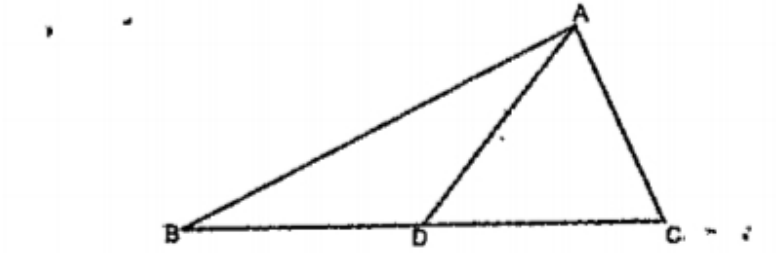
BOOKS - MAXIMUM PUBLICATION

MODEL PAPER 3

Example

1. In triangle ABC,AD is the blsector of $\angle A$, $AB = 10$ cm,$AC = 5$ cm.

What is $BD:CD$?



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2. In triangle ABC,AD is the bisector of $\angle A$, $AB = 10$ cm,$AC = 5$ cm. If $BD = 4$cm,find CD.

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3. What $\frac{1}{2}+\frac{1}{2^2}$ in the form $\frac{A}{B}$.What is the decimal form of $\frac{1}{2}+\frac{1}{2^2}$?

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4. The sides of a triangle are 8cm,10cm and 6cm.

What kind of triangle is this?

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5. The sides of a triangle are 8cm,10cm and 6cm.

What is the radius of the circumcircle?

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6. $\triangle ABC$ is an equilateral triangle of side 2cm. What is the altitude from A to BC? What is the perimeter of the square drawn with altitude as the side?

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7. Divide a line of length 7cm in the ratio $3:2$

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8. Write $\frac{1}{3}$ in the decimal form as $0.333\ldots\ldots$

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9. Sum of the digit of a two digit number is 5.

Digit in the right end is 1 less than the digit in

the left end.

If the digit in the right end is x and that in the left end is y, Write the pair of equations.

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10. Sum of the digit of a two digit number is 5. Digit in the right end is 1 less than the digit in the left end.

Find the number by solving the equations.

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11. The length of a rectangle is $\sqrt{2}$cm and the breadth $\frac{1}{\sqrt{2}}$ cm.

What is the approximate sum of length and breadth.

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12. The length of a rectangle is $\sqrt{2}$cm and the breadth $\frac{1}{\sqrt{2}}$ cm.

Calculate the approximate perimeter of the rectangle.

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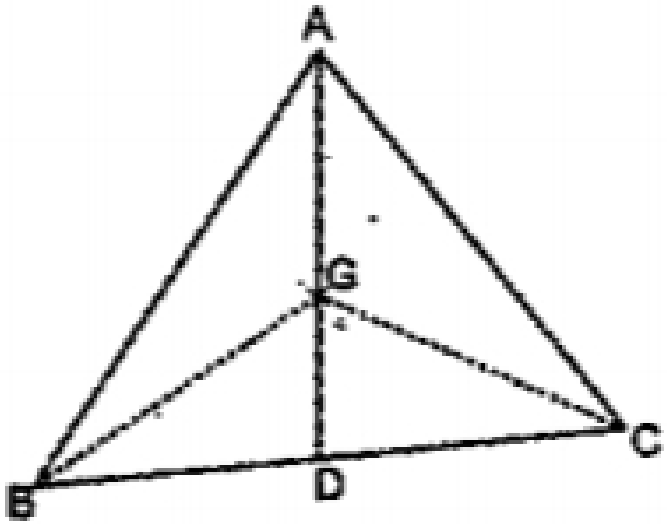
13. In the figure,AD is the line joining a vertex to the mid point of the opposite side.

G is a point on AD which divides AD in the ratio $2:1$ as $AG:GD=2:1$

The area of $\triangle BGA$ is 24 cm^2.What is the

area of $\triangle BGD$?



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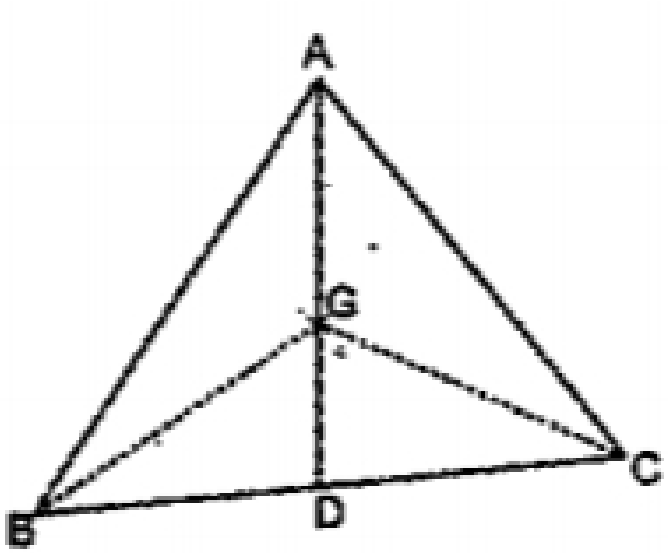
14. In the figure,AD is the line joining a vertex to the mid point of the opposite side.

G is a point on AD which divides AD in the

ratio $2:1$ as $AG:GD=2:1$

What is the area of triangle BGC.



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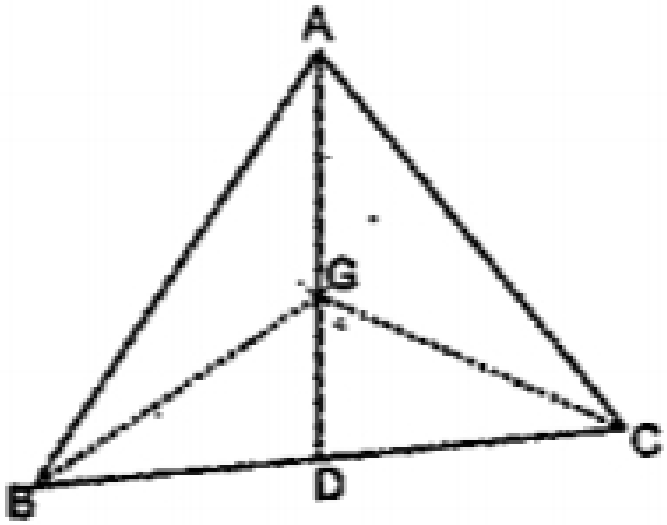
15. In the figure,AD is the line joining a vertex to the mid point of the opposite side.

G is a point on AD which divides AD in the ratio $2:1$ as $AG:GD=2:1$

Name the triangle having equal area in the picture



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16. $x = \sqrt{0.444\ldots}$

What is the fractional form of x^2

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17. $x = \sqrt{0.444\ldots}$

What is the fractional form of x

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18. $x = \sqrt{0.444\ldots}$

Find $x + \frac{1}{x}$

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19. The difference between the sides of two squares is 2. The difference between their area is $33cm^2$. Find the sides.

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20. In $\triangle ABC$, $AB = 4cm, AC = 5cm$, $\angle A = 120^\circ$.

Draw the triangle and construct its circumcicle. What is the radius of the circumcircle.

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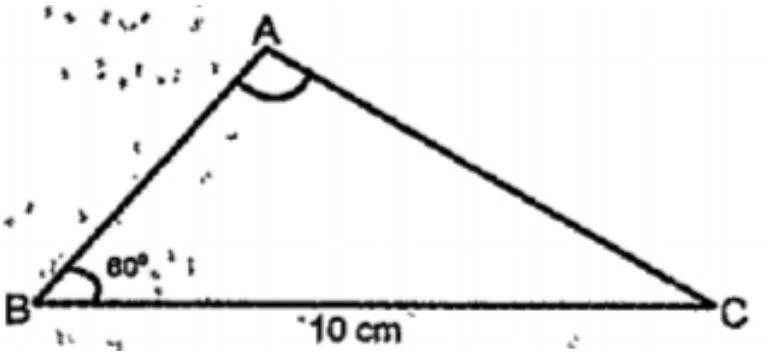
21. In the figure $\angle A = 90^\circ, \angle B = 60^\circ$

$BC = 10cm$

What is the length of the side AB



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22. Complete the table

$m_{1\,(kg)}$	$m_{2\,(kg)}$	$d_{(m)}$	$F_{(N)}$
10	10	1	F
5	10	1	(a)
5	5	1	(b)
10	10	2	(c)
10	10	½	(d)

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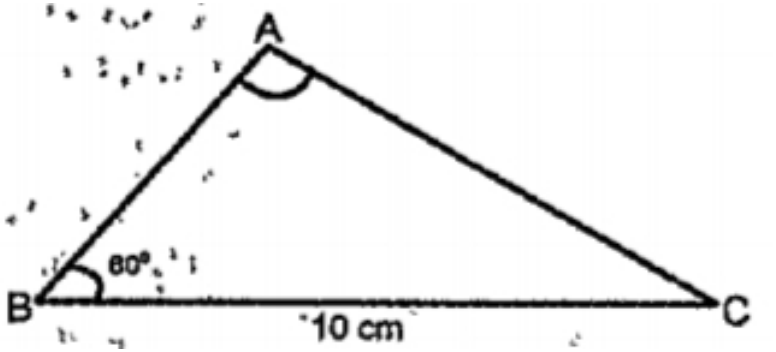
23. In the figure $\angle A = 90^{\circ}, \angle B = 60^{\circ}$

$BC = 10cm$

Calculate the area of this triangle.



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24. Cost of 2 pens and 3 pencils is 70 rupees.

Cost of 2 pens and 5 pencils is 90 rupees

What is the cost of one pencil?

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25. Cost of 2 pens and 3 pencils is 70 rupees.

Cost of 2 pens and 5 pencils is 90 rupees

What is the cost of one pen

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26. Cost of 2 pens and 3 pencils is 70 rupees.

Cost of 2 pens and 5 pencils is 90 rupees

What is the cost of 10pens and 10 pencils

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27. Cost of 2 pens and 3 pencils is 70 rupees.

Cost of 2 pens and 5 pencils is 90 rupees

What is the cost of 3pens and 2pencils together.

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28. In $\triangle ABC$,AQ is the bisector of $\angle A$. $AB = 18, AC = 12, AQ = 6$ If AP is the bisector of $\angle BAQ$ What is $BQ : QC$?

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29. In $\triangle ABC$,AQ is the bisector of $\angle A$. $AB = 18, AC = 12, AQ = 6$If AP is the bisector of $\angle BAQ$ What is $BP : PQ$?

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30. In $\triangle ABC$,AQ is the bisector of $\angle A$. $AB = 18, AC = 12, AQ = 6$ If AP is the bisector of $\angle BAQ$ If $BC = 16$,find BP,PQ and QC

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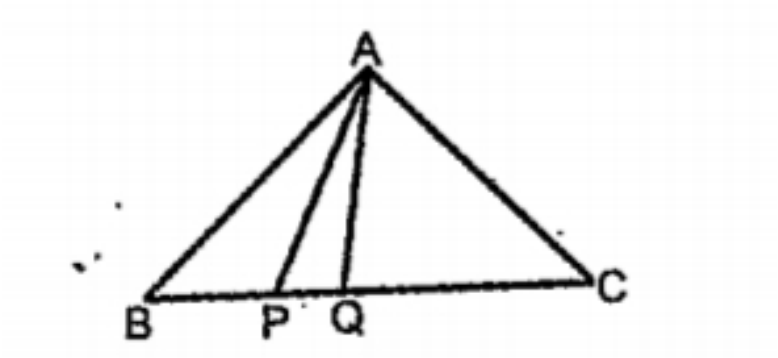
31. In $\triangle ABC$,AQ is the bisector of $\angle A$.

$AB = 18, AC = 12, AQ = 6$

If AP is the bisector of $\angle BAQ$

If the area of $\triangle ABP$ is A, What is the area

of $\triangle ABC$.



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32. Find the decimal form of $\frac{1}{11}$. Also write $\frac{2}{11}$ and $\frac{3}{11}$ in the decimal form.

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33. Two years ago Salim's age is three times his daughter's age. After 6years,Salim's age will be 4 more than twice his daughter's age. Calculate the age of Salim and his daughter.

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34. $x = \frac{1}{\sqrt{2}+1}$

What is the approximate value of $\frac{1}{x}(\sqrt{2} = 1.414)$

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35. $x = \dfrac{1}{\sqrt{2}+1}$

Find $x + \dfrac{1}{x}$

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36. $x = \dfrac{1}{\sqrt{2}+1}$

Calculate $\left(x + \dfrac{1}{x}\right)^2$

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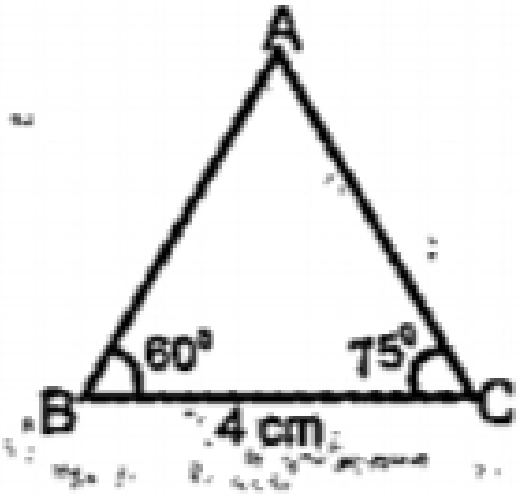
37. In the figure $BC = 4cm$, $\angle B = 60^\circ$

, $\angle C = 75^\circ$

Calculate the perimeter of $\triangle ABC$



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38. ABCD is square. P,Q,R,S are the mid points of the sides. If side of ABCD is 6cm. What is the length of one side of PQRS.

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39. ABCD is square. P,Q,R,S are the mid points of the sides. If side of ABCD is 6cm. What is the area of PQRS

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40. ABCD is square. P,Q,R,S are the mid points of the sides. If side of ABCD is 6cm. Calculate the perimeter of PQRS.

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41. In the quadrilateral ABCD,$AB = 5.5$cm,

$BC = 6.5$cm.

$CD = 7$ cm $AD = 7.5$cm,

$\angle A = 80^\circ$

Draw a quadrilateral ABCD with these measurement

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42. The ratio of incomes of two persons is $9:7$ the ratio of their expenses is $4:3$. If each of them saves Rs. 200 every month,find their monthly incomes.

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43. A,B,C are three points

$AB=\sqrt{75}, BC=\sqrt{108}$

$AC = \sqrt{363}$.

Write these lengths as the product of $\sqrt{3}$ and as integer.

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44. A,B,C are three points

$AB = \sqrt{75}, BC = \sqrt{108}$

$AC = \sqrt{363}$.

Check whether these points are on a line or not.

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45. A,B,C are three points

$AB = \sqrt{75}, BC = \sqrt{108}$

$AC = \sqrt{363}.$

What is the approximate distance between A and C.

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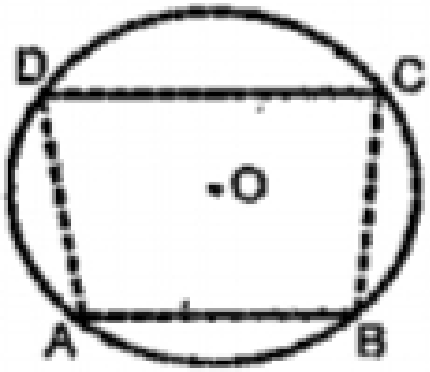
46. In the picture ABCD is a quadrilateral, AB is parallel to CD. Also $AB = 12cm$ and radius of the circle 10cm.

What is the distance from center to AB.



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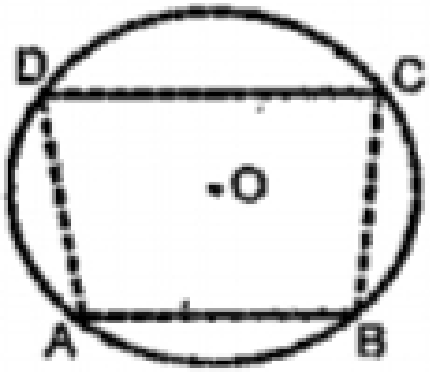
47. In the picture ABCD is a quadrilateral, AB is parallel to CD. Also $AB = 12cm$ and radius of the circle 10cm.

If the distance from AB and CD is 14cm,What is

the length of CD.



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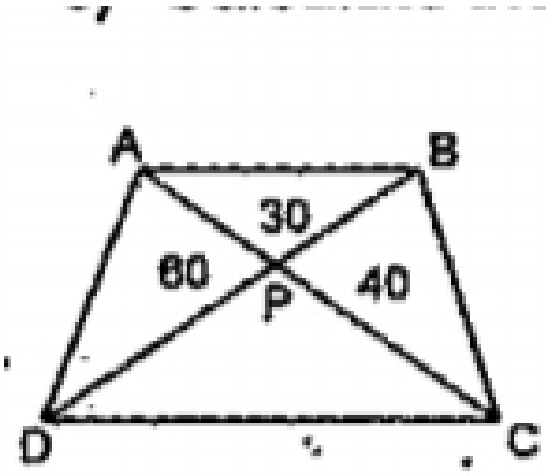
48. In the figure the diagonals AC and BD intersect at P. The area of PAB is $30cm^2$, area of PDA is $60cm^2$ and area of PBC is $40cm^2$.

What is $PD : PB$?



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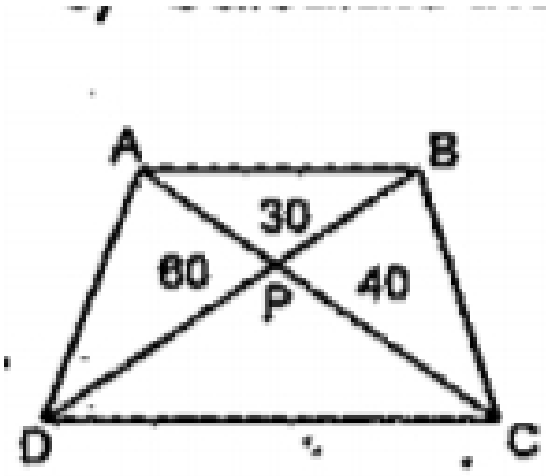
49. In the figure the diagonals AC and BD intersect at P. The area of PAB is $30cm^2$, area of PDA is $60cm^2$ and area of PBC is $40cm^2$.

What is the area of PDC



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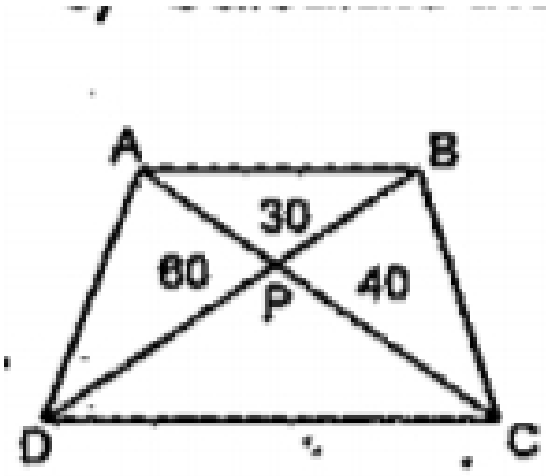
50. In the figure the diagonals AC and BD intersect at P. The area of PAB is $30cm^2$, area of PDA is $60cm^2$ and area of PBC is $40cm^2$.

What is $PA : PC$?



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51. The sum of 4 times x and 3 times y is 39.

The difference of 3 times x and 2 times y is 8.

Write the pair of equations.

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52. The sum of 4 times x and 3 times y is 39. The difference of 3 times x and 2 times y is 8. Find the numbers by solving the equations.

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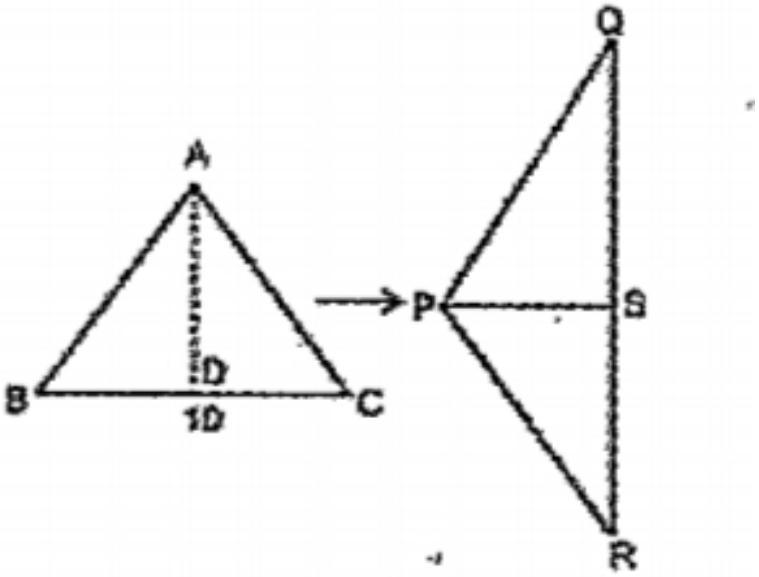
53. ABC is an equilateral triangle with side 10 cm, and AD is the altitude to the side BC. If it cut into two triangles along AD and pieces are joined to get another triangle PQR

What is the length of PS?



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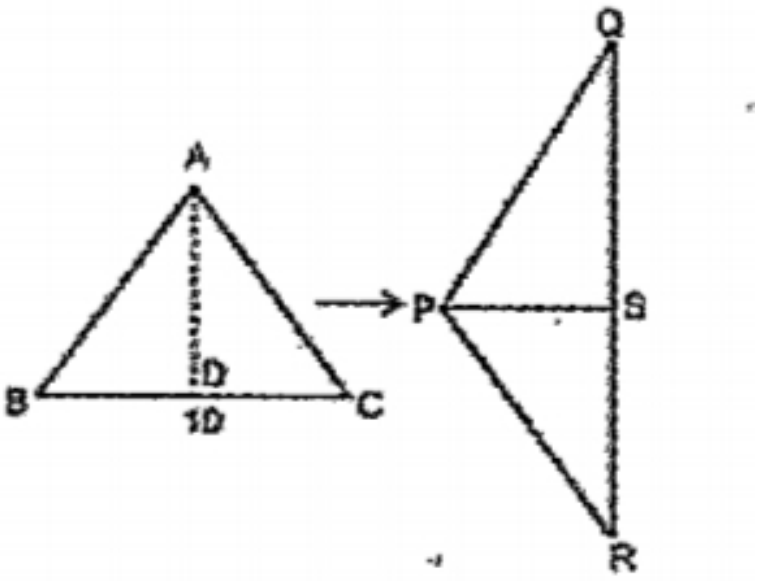
54. ABC is an equilateral triangle with side 10 cm, and AD is the altitude to the side BC.

If it cut into two triangles along AD and pieces

are joined to get another triangle PQR

What is the length of QR?



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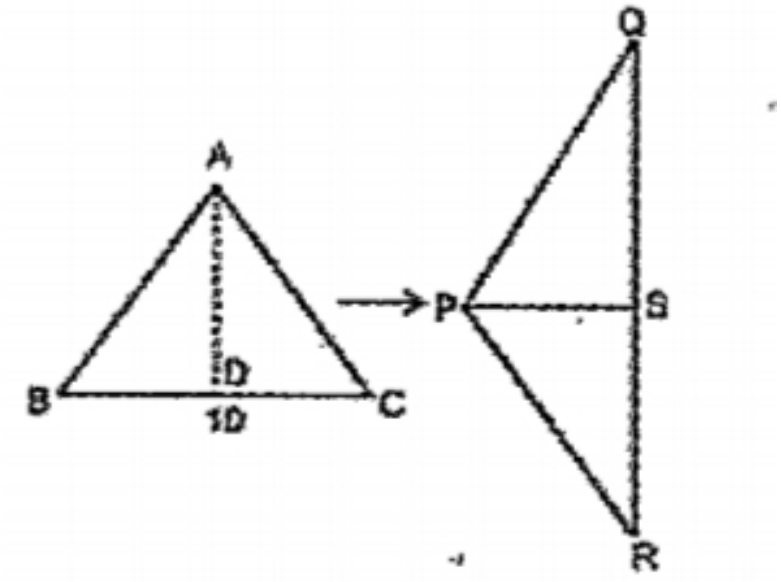
55. ABC is an equilateral triangle with side 10 cm, and AD is the altitude to the side BC.

If it cut into two triangles along AD and pieces are joined to get another triangle PQR

Find the approximate perimeter of $\triangle PQR$.



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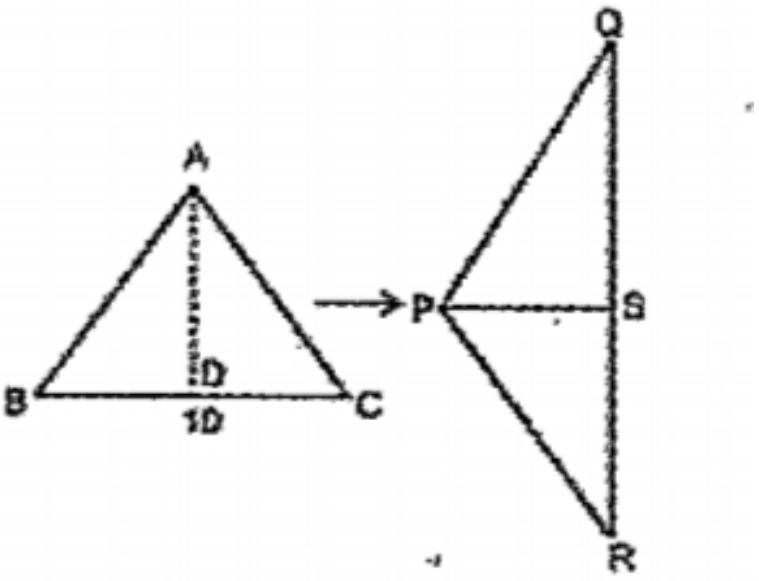
56. ABC is an equilateral triangle with side 10 cm, and AD is the altitude to the side BC.

If it cut into two triangles along AD and pieces are joined to get another triangle PQR

Calculate the area of $\triangle PQR$.



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57. Read the following and answer the questions given below.

1,2,3,4....are natural numbers or counting numbers.

The sum of first 4 numbers is

$1 + 2 + 3 + 4 = (1 + 4) + (2 + 3)$

$= 5 + 5$

$= 5 \times 2$

$= (4 + 1) + \frac{4}{2}$

We can make pairs as given above and can establish a formula to find the sum of first n

natural numbers as sum = $(1+n) \times \frac{n}{2}$

Find the sum of first 10 natural numbers.

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58. Read the following and answer the questions given below.

1,2,3,4....are natural numbers or counting numbers.

The sum of first 4 numbers is

$1+2+3+4=(1+4)+(2+3)$

$=5+5$

$= 5 \times 2$

$= (4 + 1) + \frac{4}{2}$

We can make pairs as given above and can establish a formula to find the sum of first n natural numbers as sum = $(1 + n) \times \frac{n}{2}$

Calculate the sum of natural numbers from 10 to 20.

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59. Read the following and answer the questions given below.

1,2,3,4....are natural numbers or counting numbers.

The sum of first 4 numbers is

$1 + 2 + 3 + 4 = (1 + 4) + (2 + 3)$

$= 5 + 5$

$= 5 \times 2$

$= (4 + 1) + \frac{4}{2}$

We can make pairs as given above and can establish a formula to find the sum of first n natural numbers as sum = $(1 + n) \times \frac{n}{2}$

In the arrangement of numbers

1,3,6,10,15...

$1 = 1,3 = 1 + 2,6 = 1 + 2 + 3. .$

What is $10^{t}h$ number in the arrangement 1,3,6,10,15....

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60. Read the following and answer the questions given below.

1,2,3,4....are natural numbers or counting numbers.

The sum of first 4 numbers is

$1+2+3+4=(1+4)+(2+3)$

$=5+5$

$= 5 \times 2$

$= (4 + 1) + \frac{4}{2}$

We can make pairs as given above and can establish a formula to find the sum of first n natural numbers as sum = $(1 + n) \times \frac{n}{2}$

What is the number at the right and of $10^t h$ line

1

2 3

4 5 6

7 8 9 10

.....

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61. Read the following and answer the questions given below.

1,2,3,4....are natural numbers or counting numbers.

The sum of first 4 numbers is

$1 + 2 + 3 + 4 = (1 + 4) + (2 + 3)$

$= 5 + 5$

$= 5 \times 2$

$= (4 + 1) + \frac{4}{2}$

We can make pairs as given above and can

establish a formula to find the sum of first n natural numbers as sum = $(1 + n) \times \frac{n}{2}$

Find the sum of first 10 natural numbers.

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