NEW VISION SCHOOL KHAMMAM

PLANE GEOMETRYFOR X FI

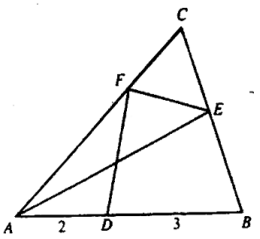
PROBLEM SET -1

1. ABCD is trapezium with $\overline{AB}$ parallel to $\overline{CD}$ and the diagonals intersect at the point P. The area of Δ ABP is 32 cm² and the area of Δ CDP is 50 cm². The area of the trapezium is:
   a) 162 cm² b) 364 cm² c) 324 cm² d) 164 cm²
2. If the length of the side of certain square is increased by 4m, then the area is increased by 56m². If the length of a side of this bigger square is then increased by 4m, how many square meters bigger than the original square is the new square?
   a) 56 b) 100 c) 121 d) 144.
3. A triangle has sides of length 5, 12 and 13. What is the distance from the center of the incircle to the vertex of the triangle which is farthest from this center?
   a) $\sqrt{30}$ b) $2\sqrt{30}$ c) $\sqrt{26}$ d) $2\sqrt{26}$.
4. If a parallelogram has an area of 21cm² and diagonals of length 6cm and 14cm, what is the smaller of the two angles between the diagonals?
   a) 15⁰ b) 30⁰ c) 45⁰ d) 60⁰.

5. Triangle ABC in the figure has area 10. Points D, E and F, all distinct from A, B and C, are on sides AB, BC and CA respectively, and AD = 2, DB = 3. If triangle ABE and quadrilateral DBEF have equal areas, then that area is

   A) 4 b) 5 c) 6 d) $\frac{5}{3}\sqrt{10}$

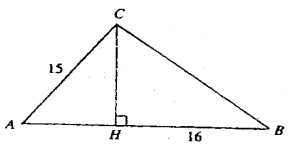
   e) not uniquely determined.



6. A pentagon is made up of an equilateral △ ABC of side length 2cm on top of a square BCDE. Circumscribe a circle through points A, D and E. The radius of the circle is:
   a) $1+\frac{\sqrt{3}}{2}$ b)$5-2\sqrt{3}$ c) 2 d)$1+\sqrt{3}$
7. A right triangle ABC with hypotenuse AB has side AC = 15, Altitude CH divides AB into segments AH and HB, with HB = 16. The area of ΔABC is

   a) 120 b) 144

   c) 150 d) 216



e) $144\sqrt{5}$

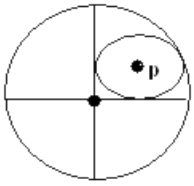
8. ABC is a right triangle with right angle at B; AC=2 units ,BC =1 unit and BD is perpendicular to AC. The area of the rectangle with BD as one of its diagonal is:

   a) $\frac{\sqrt{3}}{4}$ sq. units b) $\frac{3}{16}$ sq. units c) $\frac{\sqrt{3}}{8}$ sq. units d) $\frac{\sqrt[3]{3}}{16}$ sq. units

9. A and B are two points on a circle with center O, and C lies outside the circle, on ray AB. If AB =24cm, BC =28, OA = 15cm then OC = ...

   a) 41cm, b)49cm c)64cm d)52cm

10. In the figure O is the center of the bigger circle and P is the center of the smaller circle. The radius of the smaller circle if the radius of bigger circle is 1 unit is:



   a) $\sqrt{2}$ -1 b) $\sqrt{2}$ +1 c) $\frac{1}{4}$ d) $2\sqrt{2}$ -1