Q.1) (A) Choose the correct alternative.   [3]

i) If two sides of the right angled triangle are 3 and 4, then the length of the third side is.......

A) 5   B) $\sqrt{7}$ C) 5 or $\sqrt{7}$ D) none of these

ii) Find the perimeter of a square of its diagonal is $10\sqrt{2}$ cm.

A) 10 cm   B) $40\sqrt{2}$ cm   C) 20 cm   D) 40 cm

iii) If in $\triangle$ABC, AB=15 cm, BC=17 cm and AC=8 cm, then which of the following will be a right angle?

A) $\angle$A   B) $\angle$B   C) $\angle$C   D) none of these

Q.2) Solve the following questions. [Any-4]   [8]

i) Find the diagonal of a rectangle having length and breadth 12 cm and 8 cm respectively.

ii) In $\triangle$ABC, AP is median. If $AP^2+AC^2=260$, then find BC.

iii) In $\triangle$ABC, $\angle$ACB is an obtuse angle, seg AD$\perp$ seg BC.

Prove that: $AB^2=BC^2+AC^2+2BC \times CD$. Complete the proof by filling the blanks.

BD$\boxed{}$ + DC

BD= a + x

In $\triangle$ABD, $\angle$D=90

$\therefore$ $c^2 = \boxed{} + p^2$ ....$\boxed{}$ (i)

$\therefore$ $c^2 = a^2 + \boxed{}+ x^2 + p^2$

Also, in $\triangle$ADC, $\angle$D=90 °

$\therefore$ $\boxed{}=x^2+p^2$

$\therefore$ $p^2=\boxed{}$

$\therefore$ $c^2=a^2+2ax+x^2+b^2\boxed{}$

$c^2=a^2+b^2+2ax$

AB$^2=\boxed{}$
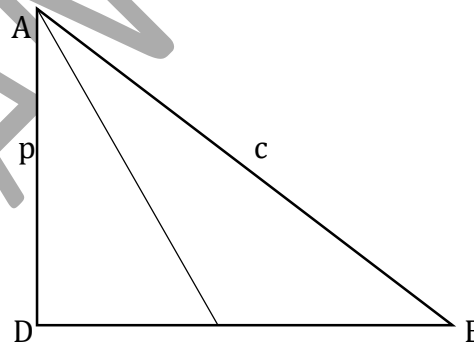
iv) Find the height of an equilateral triangle having side 15cm.
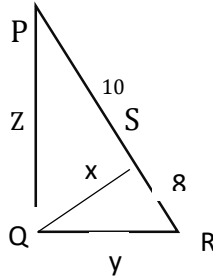
v) Find the side of a square whose diagonal is $16\sqrt{2}$ cm long.

Q.3) Solve the following questions. [Any-2]   [6]

i) Adjacent side of a parallelogram are 11cm and 17cm. If one of its diagonal is 26cm,

then find length of its other diagonal.

ii) See the given figure. In △PQR, ⌊PQR=90°, seg QS ⊥ seg PR, then find x, y, z.

P

Z   10
       S
   x   8
Q   R
   y

iii) In an isosceles triangle, length of the congruent side is 13cm and its base is 10cm.

Find the distance between the vertex opposite to the base and the centroid.
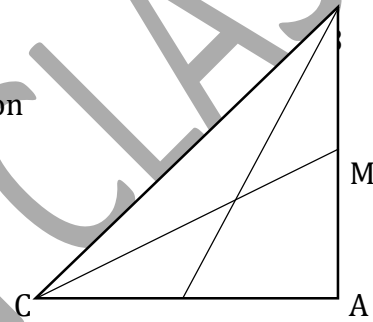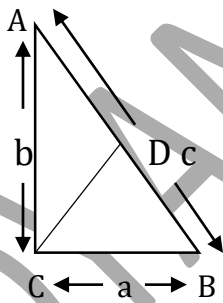
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Q.4) Attempt Any Two.   [8]

i) In the adjoining figure, △PQR is an equilateral triangle. Point S is on

seg QR such that QS=$\frac{1}{3}$ QR. Prove that: 9 PS^2 =PQ^2.

ii) In △ABC, ⌊BAC=90°, seg BL and seg CM are medians of △ABC.

Then prove that 4(BL^2+CM^2)=5BC^2.

iii) In △ABC, ⌊C=90°. If BC=a, CA=b, AB=c and the length of the altitude from

vertex C on side AB is p, then show that

i. cp=ab

ii. $\dfrac{1}{P^2}$ = $\dfrac{1}{A^2}$ + $\dfrac{1}{B^2}$

A

b   D c

C ← a → B

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Best of Luck........

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