TRIANGLES

Q.1) If an equilateral triangle of area X and a square of area Y have the same perimeter, then -

(A) X >Y (B) X < Y

(C) X = Y (D) X ≤ Y

Q.2) If any two sides of a triangle are produced beyond its base and the exterior angles thus obtained are bisected, then these bisectors will include an angle equal to -

(A) half the sum of the base angles

(B) sum of the base angles

(C) half the difference of the base angles

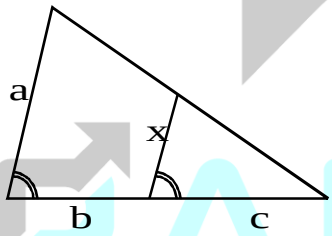
(D) difference of the base angles

Q.3) The area of a right angled triangle is 40 sq. cm. and perimeter is 40 cm. The length of its hypotenuse is -

(A) 16 cm. (B) 18cm.

(C) 17 cm. (D) Data sufficient

Q.4) Using the given figure, determine x



(A) $\frac{ac}{b+c}$ (B) $\frac{ac}{b-c}$

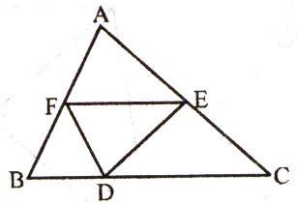
(C) $\frac{b+c}{ac}$ (D) $\frac{2ac}{b+c}$

Q.5) ABC and BDE are two equilateral triangles such that D is the mid-point of BC. Ratio of the areas of triangles ABC and BDC is-

(A) 2 : 1 (B) 1 : 2

(C) 4 : 1 (D) 1 : 4

Q.6) In triangle ABC, D, E, F are points of trisection of BC, AC and AB respectively. Which of the following statements is not true ?



(A) Area ΔEDC = 2/9 area ΔABC

(B) Area ΔFBD = 2/7 area AFDC

(C) Area ΔDEF = 2/9 area ΔABC

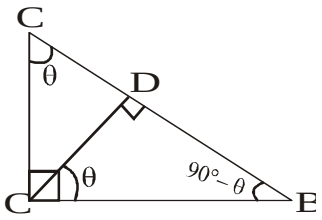
(D) Area (ΔEDC + ΔDBF +ΔAFE)=2 area ΔDEF

Q.7) If ΔDEF if DE = $6\sqrt{3}$ cm, DF = 12 cm and EF = 6 cm, then the angle E is

(A) 120^0 (B) 90^0

(C) 60^0 (D) 45^0

Q.8) In the adjoining figure, $\frac{BD}{DA}$ is equal to



(A) $\left(\frac{AB}{AC}\right)^2$ (B) $\frac{AB}{AC}$

(C) $\left(\frac{AB}{AD}\right)^2$ (D) $\frac{AB}{AD}$

Q.9) In Δ ABC, AB = 3 cm, AC = 4 cm and AD is the bisector of ∠A. Then, BD : DC is :

(A) 9 : 16 (B) 16 : 9

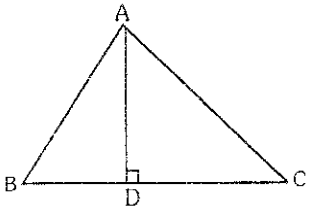
(C) 3 : 4 (D) 4 : 3

Q.10) In Δ ABC and Δ DEF, $\angle A = 50^0, \angle B = 70^0, \angle C = 60^0, \angle D = 60^0, \angle E = 70^0, \angle F = 50^0$, then Δ ABC is similar to :

(A) ΔDEF (B) ΔEDF

(C) ΔDFE (D) ΔFED

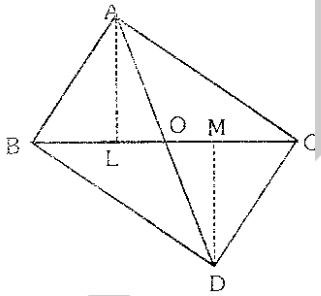
Q.11) In a right angled ΔABC, right angled at A, if $AD \perp BC$ such that AD = p, if BC = a, CA = b and AB = c, then :



(A) $p^2 = b^2 + c^2$ (B) $\frac{1}{p^2} = \frac{1}{b^2} + \frac{1}{c^2}$

(C) $\frac{p}{a} = \frac{p}{b}$ (D) $p^2 = b^2 c^2$

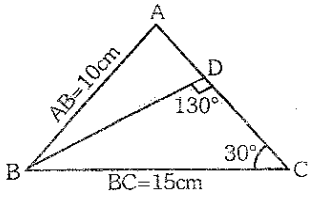
Q.12) In the adjoining figure, ABC and DBC are two triangles on the same base BC, $AL \perp BC$ and $DM \perp BC$. Then, $\frac{area(\Delta ABC)}{area(\Delta DBC)}$ is equal to ;



(A) $\frac{AO}{OD}$ (B) $\frac{AO^2}{OD^2}$

(C) $\frac{AO}{AD}$ (D) $\frac{OD^2}{AO^2}$

Q.13) In the adjoining figure, AD : DC = 2 : 3, then $\angle ABC$ is equal to :



(A) 30^0 (B) 40^0

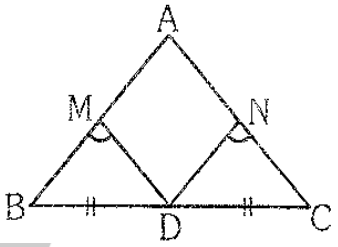
(C) 45^0 (D) 110^0

Q.14) If D, E, F are respectively the mid points of the sides BC, CA and AB of ΔABC and the area of ΔABC is 24 sq. cm, then the area of ΔDFE is :-

(A) 24 cm^2 (B) 12 cm^2

(C) 8 cm^2 (D) 6 cm^2

Q.15) In the adjoining figure D is the midpoint of a ΔABC. DM and DN are the perpendiculars on AB and AC respectively and DM = DN, then the ΔABC is :



(A) right angled (B) isosceles

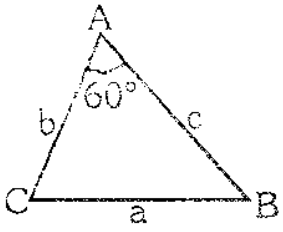
(C) equilateral (D) scalene

Q.16) The difference between altitude and base of a right angled triangle is 17 cm and its hypotenuse is 25 cm. What is the sum of the base and altitude of the triangle is ?

(A) 24 cm (B) 31 cm

(C) 36 cm (D) can't be determined

Q.17) In the adjoining figure $\angle BAC = 60^0$ and BC = a, AC = b and AB = c, then :



(A) $a^2 = b^2 + c^2$

(B) $a^2 = b^2 + c^2 - bc$

(C) $a^2 = b^2 + c^2 + bc$

(D) $a^2 = b^2 + 2bc$

Q.18) A triangle PQR is formed by joining the mid-points of the sides of a triangle ABC, 'O' is the circumcentre of ΔABC, then for ΔPQR, the point 'O' is :

(A) incentre (B) circumcentre

(C) orthocenter (D) centroid

Q.19) In an equilateral ΔABC, if a, b and c denote the lengths of perpendiculars from A, B and C respectively on the opposite sides, then:

(A) a > b > c (B) a > b < c

(C) a = b = c (D) a = c ≠ b

Q.20) If ABC is a right angled triangle at B and M, N are the mid-points of AB and BC, than 4 (AN^2 + CM^2) is equal to-

(A) $4AC^2$ (B) $6\ AC^2$

(C) $5\ AC^2$ (D) $\frac{5}{4}\ AC^2$

Q.21) If D, E and F are respectively the mid-points of sides of BC, CA and AB of a ΔABC. If EF = 3 cm, FD = 4 cm, and AB = 10 cm, then DE, BC and CA respectively will be equal to :

(A) 6, 8 and 20 cm (B) 4, 6 and 8 cm

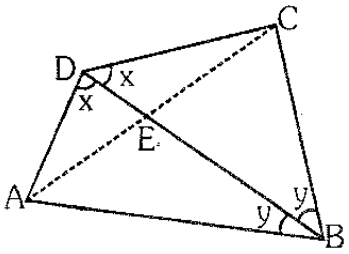
(C) 5, 6 and 8 cm (D) $\frac{10}{3}$, 9 and 12 cm

Q.22) In the right angle triangle $\angle C = 90^0$. AE and BD are two medians of a triangle ABC meeting at F. The ratio of the area of ΔABF and the quadrilateral FDCE is :

(A) 1 : 1 (B) 1 : 2

(C) 2 : 1 (D) 2 : 3

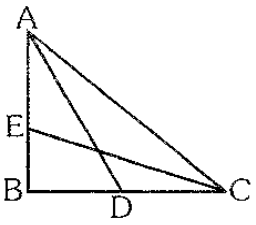
Q.23) The diagonal BD of a quadrilateral ABCD bisects $\angle B$ and $\angle D$, then :



(A) $\frac{AB}{CD} = \frac{AD}{BC}$ (B) $\frac{AB}{BC} = \frac{AD}{CD}$

(C) $AB = AD \times BC$ (D) None of these

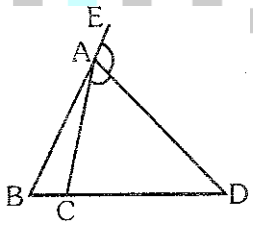
Q.24) In figure, ABC is a right triangle, right angled at B. AD and CE are the two medians drawn from A and C respectively. If AC = 5 cm and AD = $\frac{3\sqrt{5}}{2}$ cm, find the length of CE:



(A) $2\sqrt{5}$ cm (B) 2.5 cm

(C) 5 cm (D) $4\sqrt{2}$ cm

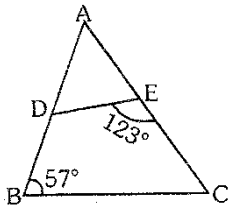
Q.25) In the figure AD is the external bisector of $\angle$ EAC, intersects BC produced to D. If AB = 12 cm, AC = 8 cm and BC = 4 cm, find CD.



(A) 10 cm (B) 6 cm

(C) 8 cm (D)9 cm

Q.26) In the figure AD = 12 cm. AB = 20 cm and AE = 10 cm. Find EC.



(A) 14 cm (B) 10 cm

(C) 8 cm (D) 15 cm

Q.27) In an equilateral triangle ABC, if AD ⊥ BC, then:

(A) $2AB^2 = 3AD^2$ (B) $4AB^2 = 3AD^2$

(C) $3AB^2 = 4AD^2$ (D) $3AB^2 = 2AD^2$

Q.28) If in the triangles ABC and DEF, angle A is equal to angle E, both are equal to 40°, AB : ED = AC : EF and angle F is 65°, then angle B is :-

(A) 35° (B) 65°

(C) 75° (D) 85°

Q.29) If D, E, F are respectively the mid points of the sides BC, CA and AB of ΔABC and the area of ΔABC is 24sq. cm, then the area of ΔDEF is :-

(A) 24 cm^2 (B) 12 cm^2

(C) 8 cm^2 (D) 6 cm^2

Q.30) In a right angled triangle, if the square of the hypotenuse is twice the product of the other two sides, then one of the angles of the triangle is :-

(A) 15° (B) 30°

(C) 45° (D) 60°

Answer Sheet

Q.1	B	Q.11	B	Q.21	C
Q.2	A	Q.12	A	Q.22	A
Q.3	B	Q.13	B	Q.23	B
Q.4	A	Q.14	D	Q.24	A
Q.5	C	Q.15	B	Q.25	C
Q.6	D	Q.16	B	Q.26	A
Q.7	B	Q.17	B	Q.27	C
Q.8	B	Q.18	C	Q.28	C
Q.9	C	Q.19	C	Q.29	D
Q.10	D	Q.20	C	Q.30	C