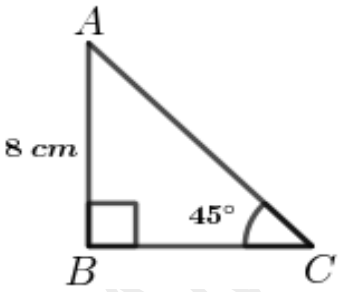
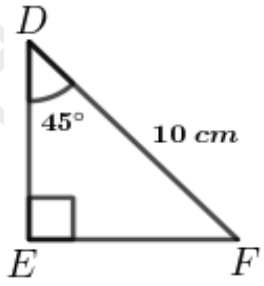
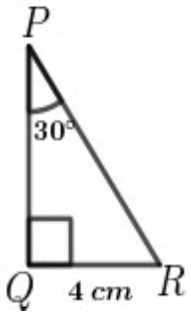
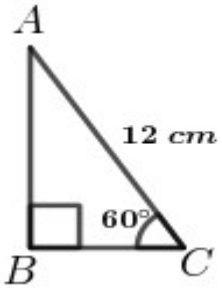
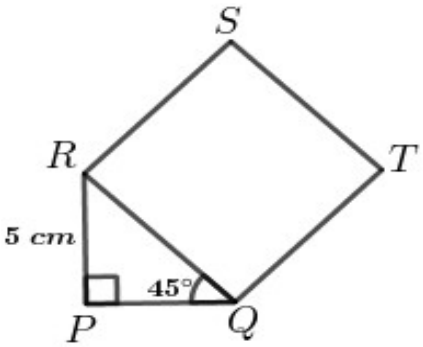
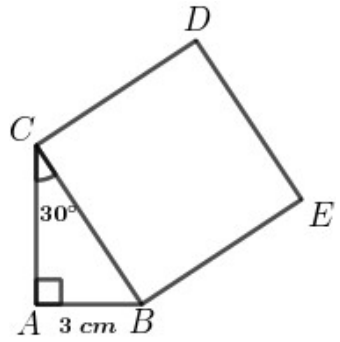
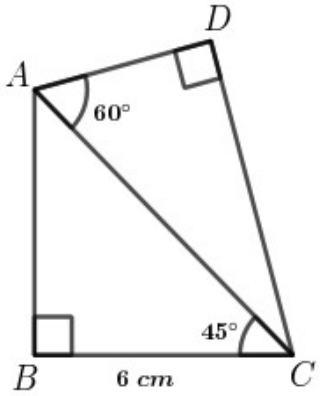
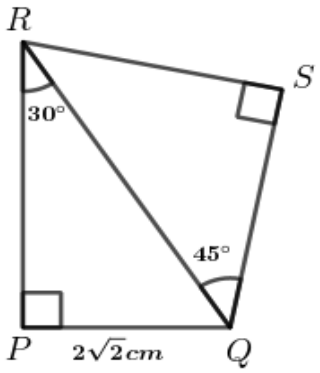
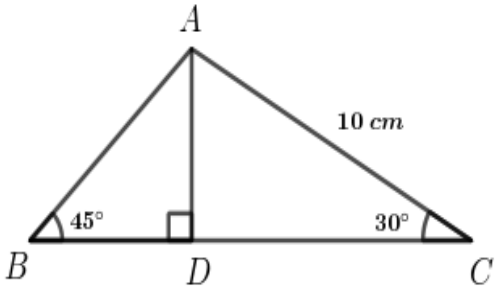
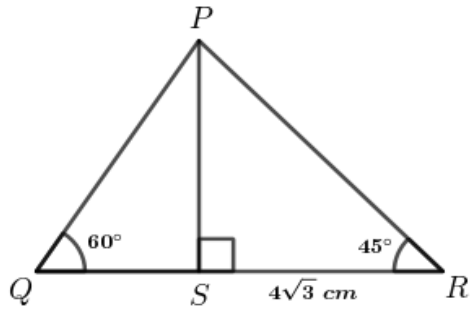
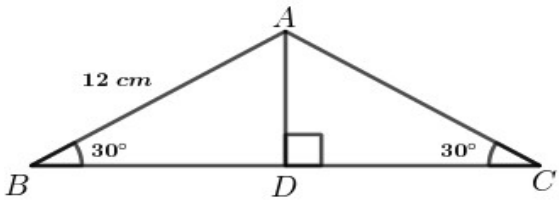
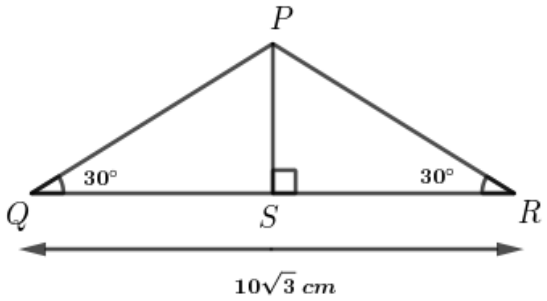
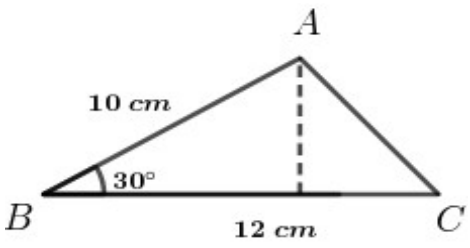
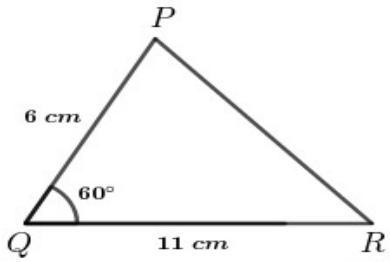
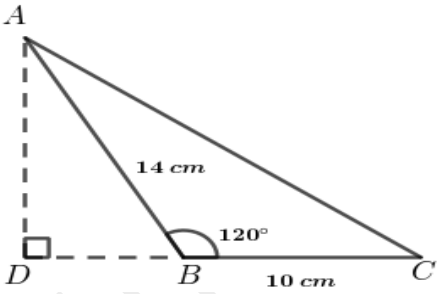
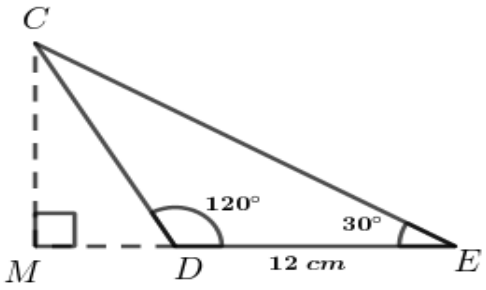
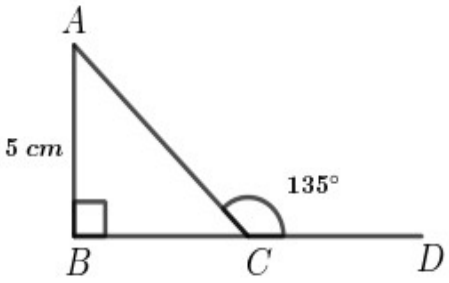
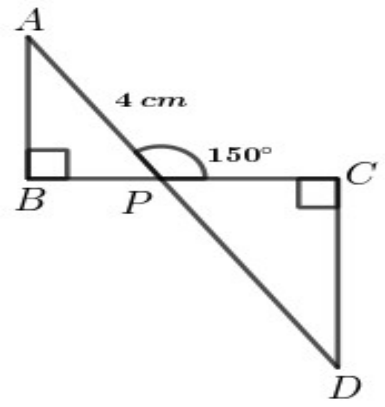
WANDOOR GANITHAM - S S L C LAST BELL 2021

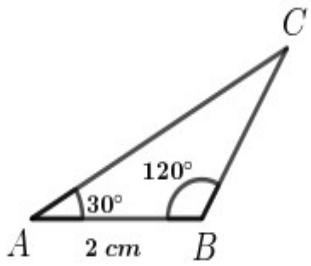
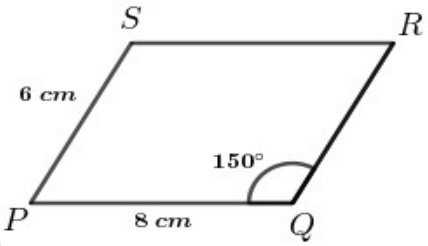
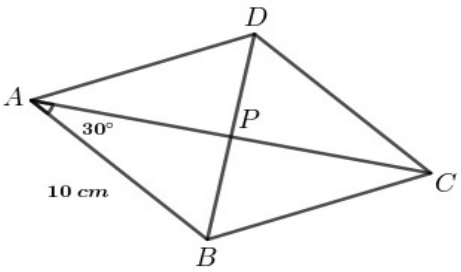
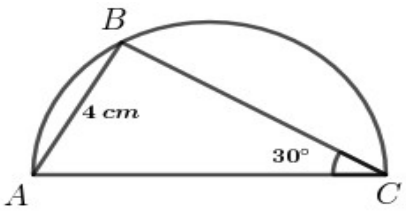
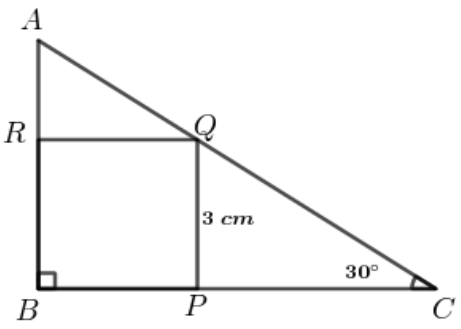
5410E **FOCUS AREA – TRIGNOMETRY**

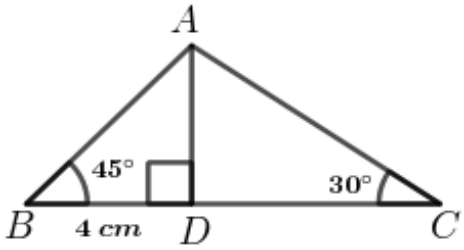
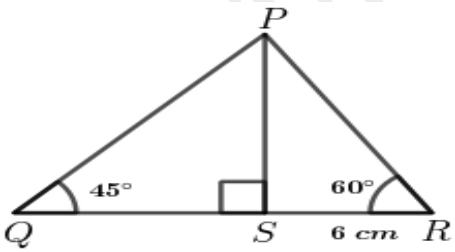
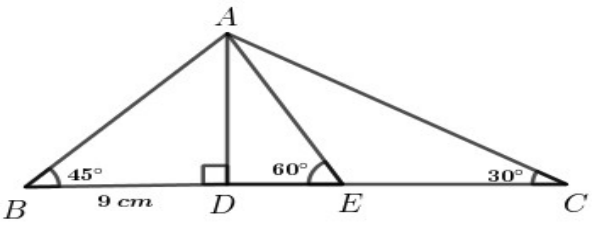
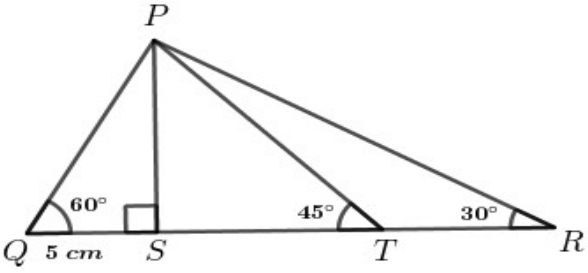
No		Score
1	**In the figure** $<B=90^o, <C=45^o, AB=8\,cm$ **a) What is the measure of** $<A$ **?** **b) What is the length of** BC **?** **c)What is the perimeter of the triangle** ABC **?** 	4
2	**In the figure** $<E=90^o, <D=45^o, DF=10$ സെ.മീ **a) What is the measure of** $<F$ **?** **b) What is the length of** EF **?** **c) What is the area of the triangle** DEF **?** 	4
3	**In the figure** $<Q=90^o, <P=30^o, QR=4\,cm$ **a) What is the measure of** $<R$ **?** **b) What is the length of** PR **?** **c) What is the perimeter of the triangle** PQR **?** 	4
4	**In the figure** $<B=90^o, <C=60^o, AC=12\,cm$ **a) What is the measure of** $<A$ **?** **b) What is the length of** BC **?** **c) What is the area of the triangle** ABC **?** 	4
5	**In the figure** $<P=90^0, <PQR=45^0, PR=5\,cm$ **a) What is the measure of** $<PRQ$ **?** **b) What is the length of** PQ **?** **c)What is the perimeter of the square** $QRST$ **?** 	4

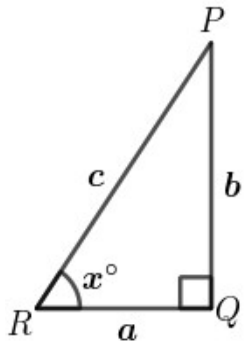
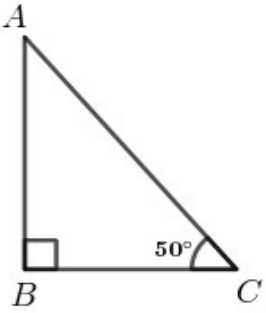
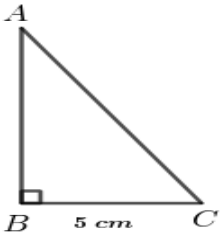
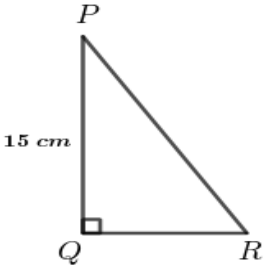
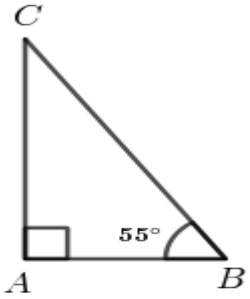
6	**In the figure** $\angle A=90^0, \angle ACB=30^0, AB=3\,cm$ **a) What is the measure of** $\angle ABC$ **?** **b) What is the length of** AC **?** **c) What is the area of the square** $BCDE$ **?** 	**4**
7	**In the figure** $BC=6\,cm, \angle B=\angle D=90^0, \angle ACB=45^0, \angle CAD=60^0$ **a) What is the measure of** $\angle BAC$ **?** **b) What is the length of** AC **?** **c) What is the area of the triangle** ABC **?** **d) What is the perimeter of the quadrilateral** $ABCD$ **?** 	**5**
8	**In the figure** $PQ=2\sqrt{2}\,cm, \angle P=\angle S=90^0, \angle RQS=45^0, \angle PRQ=30^0$ **a) What is the measure of** $\angle PQR$ **?** **b) What is the length of** QR **?** **c) What is the area of the triangle** PQR **?** **d) What is the perimeter of the quadrilateral** $PQSR$ **?** 	**5**
9	**In the figure** $AC=10\,cm, \angle B=45^0, \angle C=30^0$. AD **is perpendicular to** BC **a) What is the measure of** $\angle BAC$ **?** **b) What is the length of** AD **?** **c) What is the perimeter of the triangle** ABC **d) What is the ratio of the length of the sides if the ratio of angles of a triangle is** $2:3:7$ **?** 	**5**

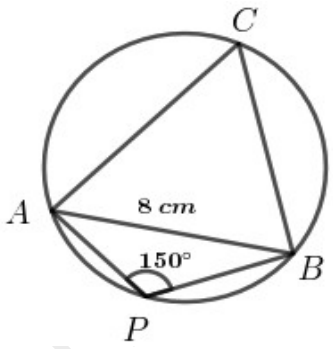
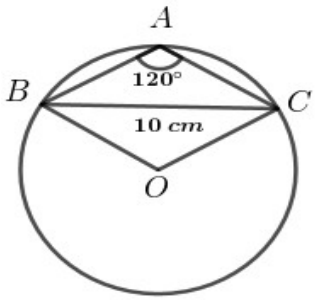
10	**In the figure** $SR=4\sqrt{3}\,cm, <Q=60^\circ, <R=45^\circ$ **PS is perpendicular to QR.** **a) What is the measure of** $<QPR$ **?** **b) What is the length of** PS **?** **c) What is the perimeter of the triangle PQR ?** **d) What is the ratio of the length of the sides if the ratio of angles of a triangle is** $3:4:5$ **?** 	**5**
11	**In the figure** $AB=12\,cm, <, <B=<C=30^0$ **. AD is perpendicular to BC .** **a) What is the measure of** $<BAD$ **?** **b) What is the length of** AD **?** **c) What is the perimeter of the triangle** ABC **?** **d) What is the ratio of the length of the sides if the ratio of angles of a triangle is** $1:1:4$ **?** 	**5**
12	**In the figure** $QR=10\sqrt{3}\,cm, <Q=<R=30^0$ **. PS is perpendicular to QR .** **a) What is the measure of** $<QPS$ **?** **b) What is the length of** QS **?** **c) What is the ratio of the sides of the triangle** PQR **?** 	**5**
13	**In the figure** $<B=30^\circ, AB=10\,cm, BC=12\,cm$ **a) What is the perpendicular distance from** A **to** BC **?** **b) What is the perimeter of the triangle ABC ?** 	**2**

14	**In the figure** $<Q=60^\circ, PQ=6\,cm, QR=11\,cm$ **a) What is the perpendicular distance from** P **to** QR **?** **b) What is the perimeter of the triangle PQR ?** 	**2**
15	**In the figure** $<ABC=120^0, <D=90^0, AB=14\,cm, BC=10\,cm$ **a) What is the measure of** $<ABD$ **?** **b) What is the length of** AD **?** **c) What is the area of the triangle** ABC **?** 	**3**
16	**In the figure** $<CDE=120^0, <E=30^0, DE=12\,cm$ **a) What is the measure of** $<DCE$ **?** **b) What is the length of** CD **?** **c) What is the measure of** $<CDM$ **?** **d) What is the length of** CM **?** **e) What is the perimeter of the triangle** CDE **?** 	**5**
17	**In the figure** $<B=90^0, <ACD=135^0, AB=5\,cm$ **a) What is the measure of** $<ACB$ **?** **b) What is the length of** BC **?** **c) What is the perimeter of the triangle** ABC **?** 	**4**
18	**In the figure** $<B=90^0, <C=90^0, AP=4\,cm, AD=10\,cm$ **a) What is the length of** DP **?** **b) What is the measure of** $<APB$ **?** **c) What is the perimeter of the triangle** ABP **?** **d) What is the area of the triangle** DPC **?** 	**5**

19	**In the figure** $\angle B=120^\circ, \angle A=30^\circ, AB=2\,cm$ **a) What is the measure of** $\angle C$ **?** **b) What is the length of** BC **?** **c) What is the perpendicular distance from** C **to** AB **?** **d) What is the area of the triangle ?** 	**5**
20	**In the parallelogram** $PQRS$ **,** $\angle Q=150^0, PQ=8\,cm, PS=6\,cm$ **a) What is the measure of** $\angle P$ **?** **b) What is the perpendicular distance from** S **to** PQ **?** **c) What is the area of the parallelogram ?** 	**3**
21	**In the figure diagonals of the rhombus** $ABCD$ **intersect at** P **.** $AB=10\,cm$ **,** $\angle BAP=30^\circ$ **a) What is the measure of** $\angle APB$ **?** **b) What is the length of** PA **?** **c) What is the length of the diagonal** AC **?** **d) What is the area of the rhombus ?** 	**5**
22	**In the figure** AC **is the diameter of the semicircle .** $\angle C=30^\circ, AB=4\,cm$ **a) What is the measure of** $\angle ABC$ **?** **b) What is the radius of the semicircle ?** **c) What is the perimeter of the triangle** ABC **?** 	**4**
23	**In the figure** $BPQR$ **is a square .** $PQ=3\,cm, \angle C=30^\circ$ **a) What is the measure of** $\angle A$ **?** **b) What are the lengths of** CQ **and** AR **?** **c) What is the perimeter of the triangle** ABC **?** 	**5**

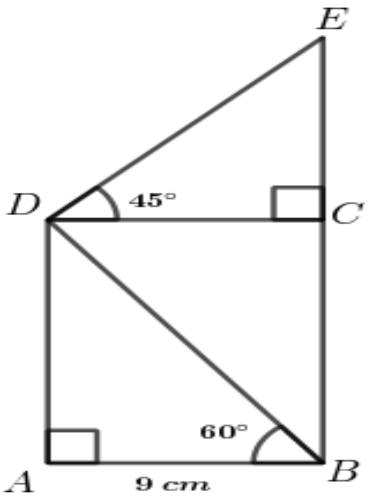
24	**In the figure** $<B=45^\circ, <D=90^\circ, <C=30^\circ, BD=4\,cm$ **a) What is the length of** AD **?** **b) What is the length of** CD **?** **c) What is the measure of** $<BAC$ **?** **d) What is the ratio of the length of the sides if the ratio of angles of a triangle is 30^0 , 45^0 and 105^0 ?** 	**5**
25	**In the figure** $<Q=45^\circ, <S=90^\circ, <R=30^\circ, SR=6\,cm$ **a) What is the length of** PS **?** **b) What is the length of** QS **?** **c) What is the measure of** $<QPR$ **?** **d) What is the ratio of the length of the sides if the ratio of angles of a triangle is 45^0 , 60^0 , 75^0 ?** 	**5**
26	**In the figure** $<ABD=45^\circ, <ADB=90^\circ$ $<AED=60^\circ, <ACE=30^\circ$ **a) What is the length of** AD **?** **b) What is the length of** CD **?** **c) What is the length of** CE **?** **d) What is the perimeter of the triangle** ADC **?** 	**5**
27	**In the** $<PQS=60^\circ, <PSQ=90^\circ$, $<PTS=45^\circ, <PRT=30^\circ$ **a) What is the length of** PS **?** **b) What is the length of** SR **?** **c) What is the length of** TR **?** **d) What is the perimeter of the triangle** PSR **?** 	**5**

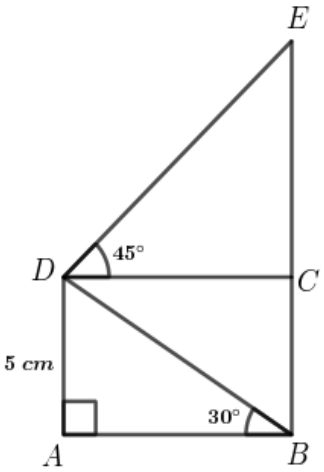
28	**In the triangle** PQR **,** $<Q=90^0, <R=x^0$ **.** a, b, c **are the midpoints of the sides** QR, PQ, PR **.** **a)** ***Which among the following is*** $\tan x^0$ ***?*** ($\frac{b}{c}$, $\frac{a}{c}$, $\frac{b}{a}$, $\frac{a}{b}$) **b) Similarly write** $\sin x^0$ **and** $\cos x^0$ **from this triangle ?** **c) Prove that** $\frac{\sin x^0}{\cos x^0} = \tan x^0$ **?** 	**4**
29	**In triangle** ABC **,** $<B=90^0, <C=50^0$ **.** **a) What is the measure of** $<A$ **?** **b) Which among the following is** $\tan 50^0$ **?** ($\frac{AB}{AC}$, $\frac{BC}{AC}$, $\frac{BC}{AB}$, $\frac{AB}{BC}$) **c) Prove that** $\tan 50^0 \times \tan 40^0 = 1$ **?** 	**4**
30	**In the triangle ABC,** $<B=90^0, BC=5\,cm,\ \sin A = \frac{5}{13}$ **a) What is the length of** AC **?** **b) Compute** $\tan A$ **?** 	**3**
31	**In the triangle PQR ,** $<Q=90^0, PQ=15\,cm,\ \tan P = \frac{8}{15}$ **a) What is the length of** QR **?** **b) Compute** $\sin P$ **and** $\cos P$ **?** 	**4**
32	**In the triangle ABC ,** $<A=90^0, <B=55^0$ **.** **a) What is the measure of** $<C$ **?** **b) Which among the following is** $\sin 55^0$ **?** (, $\frac{AB}{BC}$ $\frac{AC}{BC}$, $\frac{AC}{AB}$, $\frac{AB}{AC}$) 	**4**

	c) Similarly write $\cos 35^0$ **from this triangle ?** **d) If an angle of a right triangle is** x^0 **, what is the relation between** $\sin x^0$ **and** $\cos(90-x)^0$ **?**	
33	**In the figure ,** $AB=8\,cm, <APB=150^\circ$ **.** C **is a point on the alternate arc of the arc** APB **.** **a) What is the measure of** $<ACB$ **?** **b) What is the diameter of the circumcircle of the triangle** ABC **?** 	**3**
34	**In the figure ,** $<BAC=120^\circ, BC=10\,cm$ O **is the centre of the circle .** **a) What is the angle made by the arc** BAC **on its alternate arc ?** **b) What is the measure of** $<BOC$ **?** **c) What is the radius of the circle ?** 	**3**
35	**When sun is an elevation of 60^0, the length of the shadow of a tree is 15 meters.** **a) Draw a rough figure based on the given details ?** **b) What is the height of the tree ?** **c) What will be the length of the shadow if sun is an elevation of 30^0 ?** `	**3**
36	**A man standing 100 metres away from a building sees its top at an elevation of 45^0 .** **a) Draw a rough figure based on the given details ?** **b) Compute the height of the building ?**	**2**
37	**A man standing away from a hill sees its top at an elevation of 60 ^{0} .The height of the hill is** $300\sqrt{3}$ **metres .**	

	a) Draw a rough figure based on the given details ? **b) Compute the distance between the man and the hill ?**	**2**
38	**Two children stand on either side of a flag post of height 50 meters . First child sees the top of the flag post at an elevation of 45^0 and the second child sees it at an elevation of 30^0** **a) Draw a rough figure based on the given details?** **b) What is the distance between the flag post and the first child ?** **c) What is the distance between the flag post and the second child ?**	**4**
39	**A man standing on the bottom of a building sees the top of a tower at an elevation of 45^0 and sees it from the top of the building at an elevation of 30^0 .** **The tower is 66 metres away from the building .** **a) Draw a rough figure based on the given details ?** **b) What is the height of the tower ?** **c) What is the height of the building ?**	**4**
40	**A man standing on the bottom of a hill sees the top of a mountain at an elevation of 60^0 and sees it from the top of the hill at an elevation of 45^0 .** **The mountain is 500 metres away from the hill .** **a) Draw a rough figure based on the given details ?** **b) What is the height of the mountain ?** **c) What is the height of the hill ?**	**4**
41	**A man standing away from the bottom of a tower sees its top at an elevation of 60^0. Standing back by 50 metres , he sees it an elevation of 30^0 .** **a) Draw a rough figure based on the given details ?** **b) What is the height of the tower ?**	**4**

42	A man standing away from the bottom of a flag post sees its top at an elevation of 30^0 . Moving 20 metres towards the flag post , he sees its top at an elevation of 60^0 . a) Draw a rough figure based on the given details ? b) What is the height of the flag post ?	4
43	A boy standing 300 meters away from the bottom of a hill sees its top at an elevation of 30^0 . Moving few metres towards the hill , he sees it an elevation of 60^0 . a) Draw a rough figure based on the given details? b) What is the height of the hill ? c) How far does the boy move towards the hill ?	4
44	A boy standing 600 meters away from the bottom of a mountain sees its top at an elevation of 60^0 . Standing back by few metres , he sees it an elevation of 30^0 a) Draw a rough figure based on the given details? b) What is the height of the mountain ? c) How far does the boy move backward ?	4
45	Raju and Geetha stand on either side of a tower . Raju sees the top of the building at an elevation 30^0 and Geetha sees it an elevation of 45^0 . After moving 80 metres towards the tower , Raju sees its top at an elevation 60^0 a) Draw a rough figure based on the given details ? b) What is the height of the tower ? c) What is the distance between the tower and Geetha ?	4
46	A man standing on the top of a tower sees a car 40 m away from the foot of the tower at a depression of 60^0 . a) Draw a rough figure based on the given details ?	

	b)What is the height of the tower ?	**2**
47	**A man standing on the top of a building sees the top of a tower at a depression of 30^0 and its base at a depression of 60^0 . The distance between the building and the tower is 90 metres .** **a) Draw a rough figure based on the given details ?** **b) What is the height of the building ?** **c) What is the height of the tower ?**	**4**
48	**A man standing on the top of a building sees the top of a tower at an elevation of 30^0 and its base at a depression of 45^0 from . The height of the building is 75 metres.** **a) Draw a rough figure based on the given details ?** **b) What is the distance between the building and the tower ?** **c) What is the height of the tower ?**	**4**
49	**A man standing on the top of a building sees the top of a hill at an elevation of 45^0 and its base at a depression of 60^0 .** **The height of the building is $50\sqrt{3}$ metres .** **a) Draw a rough figure based on the given details ?** **b) What is the distance between the hill and the building ?** **c) What is the height of the hill ?**	**4**
50	**In the figure ABCD is a rectangle . AB = 9 cm** **< ABD = 60^0 , < CDE = 45^0 .** **a) What is the measure of < ADB ?** **b) What are the lengths of BD and DE ?** **c) What is the measure of < BDE ?** **d) What is the ratio of the length of the sides if the ratio of angles of a triangle is 30^0 , 45^0 and 105^0 ?** 	**5**

51	**In the figure ABCD is a rectangle . AD = 5 cm** **< ABD = 30^0 , < CDE = 45^0 .** **a) What is the measure of < ADB ?** **b) What are the lengths of BD and DE ?** **c) What is the measure of < BDE ?** **d) What is the ratio of the length of the sides if the ratio of angles of a triangle is 45^0 , 60^0 and 75^0 ?**  	**5**