5. No. If Semi circles having diameter as sides of the triangle intersect at a common point inside the circle, then the sum of the angles around that point =90x3=270 degrees. (Since angles in a semi circle is a right angle).This is absurd. Angles around a point =360 degrees.

6. Let the length of edges be x.Then $x^2-\frac{x^2}{2}=(6\sqrt{2})^2$ (Given that height of the Pyramid= $6\sqrt{2}$)

$2x^2-x^2=(6\sqrt{2})^2\times 2.\therefore x^2=144.\therefore x=\pm 12$

Volume of the Pyramid= $\frac{1}{3}(x^2)\times h = \frac{1}{3}(144)\times 6\sqrt{2}=\underline{(288\sqrt{2})}$ sq.cms

7. Let x and x+3 be the consecutive terms of the Arithmetic sequence 5,8,11 .....

Given that $x\times(x+3)=598$.'. $x^2+3x-598=0$.'. $(x+\frac{3}{2})^2=598+\frac{9}{4}=\frac{2401}{4}$

$x+\frac{3}{2}=\pm(\frac{49}{2})$ $x=\frac{-3}{2}\pm\frac{49}{2}=\frac{46}{2}$ or $\frac{-52}{2}$

The numbers are 23 and 26 (since Sequence contains positive integers only)

Position of terms are $\frac{(23-5)}{3}+1=7$ (.'. Position of the number in the term=(difference between the number and the first term /common diffrence) +1 .'.23 is in the 7th position and 26 is in the 8th position

8. Let the coordinates of the point on the circle which intersecting with the y axis be (0,y)

Then $(6-0)^2+(5-y)^2=10^2.\therefore(5-y)^2=100-36=64.\therefore 5-y=\pm 8$ y=13 or -3

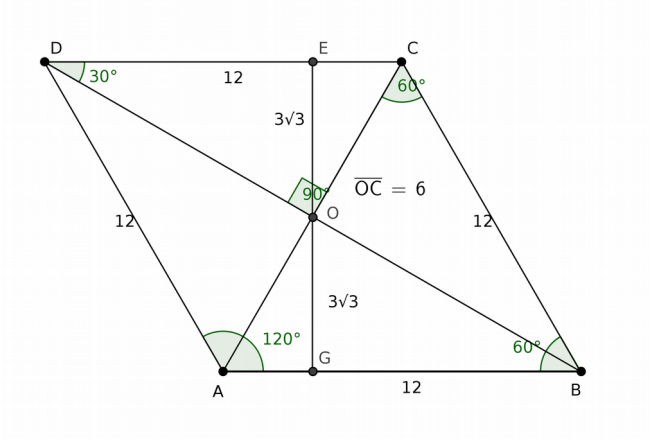
The coordinates of the point on the circle which intersecting with the y axis are (0,13) and (0,-3)

9. $x+\frac{1}{x}=6.\therefore x^2+1=6x$ and $.\therefore x^2-6x+1=0$ $(x-3)^2=8.\therefore x=3\pm\sqrt{8}$ or $x=3\pm 2\sqrt{2}$

10. a) $6\sqrt{3}$ b) $\frac{(d1\times d2)}{2}=\frac{(12\times 12\sqrt{3})}{2}=72\sqrt{3}cm^2$ c) $12,12\sqrt{3}$

$\sin 60=\frac{\overline{OE}}{\overline{OC}}$.'. OE= Sin 60xOC .'. OE= $(\frac{\sqrt{3}}{2})X\,6=3\sqrt{3}$

Distance between opposite sides = $2x\,3\sqrt{3}=6\sqrt{3}$



$\sin 30=\frac{\overline{OC}}{\overline{CD}}$.'. $\overline{OC}=\overline{CD}\times\sin 30$

$\overline{OC}=\overline{CD}\times(\frac{1}{2})$ = $\overline{OC}=12\times(\frac{1}{2})=6$

.'. AC=2xOC=12 $\sin 60=\frac{\overline{OB}}{\overline{BC}}$.'. $\overline{OB}=\overline{BC}\times\sin 60$

.'. $\overline{OB}=\overline{BC}\times(\frac{\sqrt{3}}{2})$.'. $\overline{OB}=12\times(\frac{\sqrt{3}}{2})=6\sqrt{3}$

.'. BD = $2\times OB=2\times 6\sqrt{3}=12\sqrt{3}$