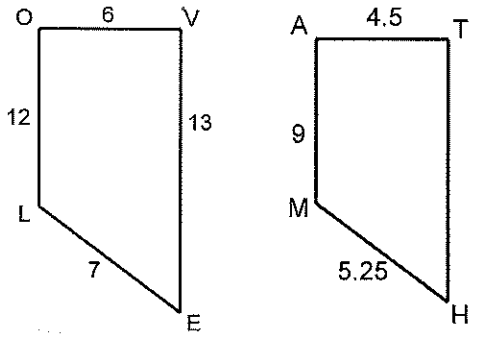
Name_____

GEOMETRY – 2nd Semester
Final Exam Review Open Ended

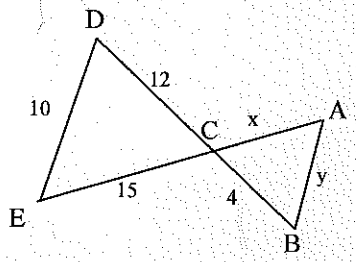
1. Give the scale factor for the dilation of LOVE→MATH.



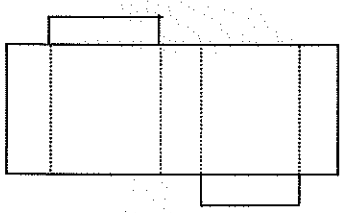
2. What is the translation image of $(3,10)$ under the translation $(x,y)\rightarrow(x+8,y-15)$.

3. What is the reflection of the image (-3, -6) over the x-axis?

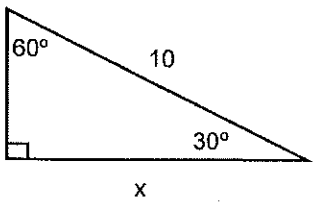
4. If $\overline{AB}//\overline{DE}$, find the value of x and y in the following image.



5. Identify the solid formed when the folds are made along the dotted lines from the given net.



6. Solve for x in simplified radical form.

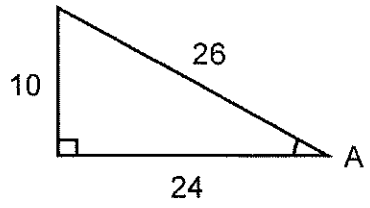


7. Find:

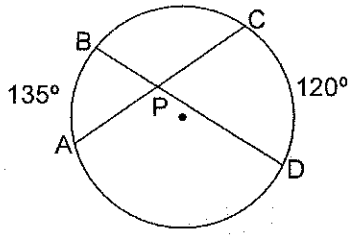
a. $\sin A =$

b. $\cos A =$

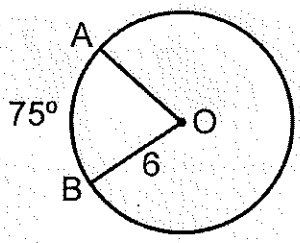
c. $\tan A =$



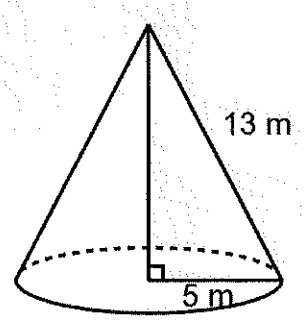
8. Given chords $\overline{BD}$ and $\overline{AC}$ of a circle intersecting at P.
If $m\overset{\frown}{AB} = 135°$ and $m\overset{\frown}{CD} = 120°$, then find $m\angle APB$.



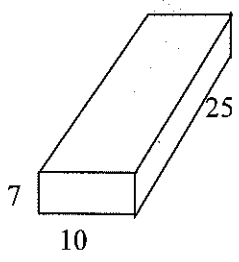
9. In circle O, OB = 6 and $m\overset{\frown}{AB} = 75°$. Find the length of arc AB.



10. Find the total surface area of a cone if the radius is 5m and the slant height is 13m.



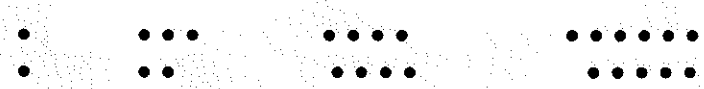
11. Find the volume of the right rectangular prism.



12. Add the matrices: $2\begin{bmatrix} -1 & -2 & 3 \\ 7 & 6 & -5 \end{bmatrix} - \begin{bmatrix} 2 & 2 & -6 \\ -3 & 8 & 3 \end{bmatrix}$

13. For the sequence below, what is the rule to determine the next term in the sequence?
$1, -\frac{1}{2}, \frac{1}{4}, -\frac{1}{8}, \ldots$

14. If the pattern of dot-figures is continued, how many dots will be in the 50th figure?



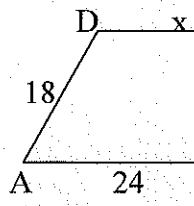
15. Match the correct name for each given formula.

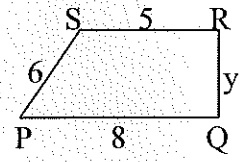
a. *(area of the circular base) x (height)*_____ f. volume of a cone
*b. (2) x (pi) x (radius)*_____ g. volume of a cylinder
*c. (area of the circular base) + (pi) x (radius) x (slant height)*_____ h. circumference
*d. (2)x(pi)x(radius) (height) + (2)x(area of the circular base)*_____ i. surface area of a cylinder
*e. (area of the circular base) x (height) / 3*_____ j. surface area of a cone

16. In the figure below ABCD is similar to PQRS.

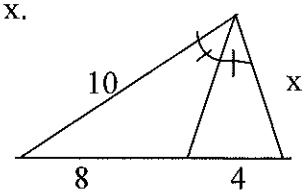
A. Find the value of x.

B. Find the value of y.

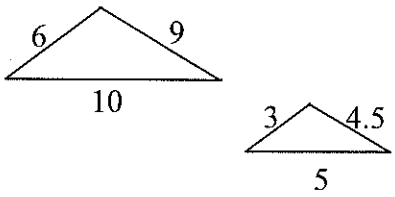




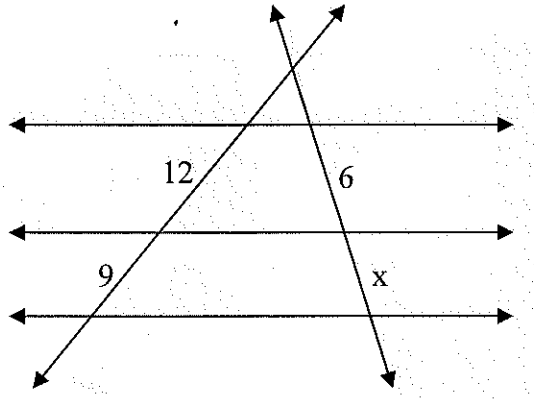
17. Find the value of x.



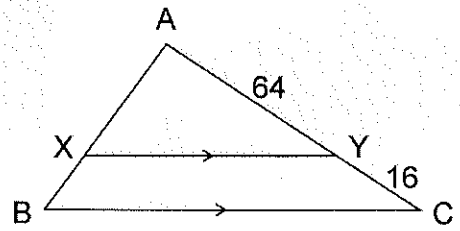
18. Determine whether the pair of triangles is similar. If they are give the reason (AA, SAS, SSS).



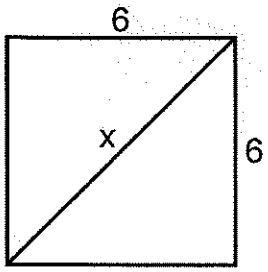
19. In the figure, find x.



20. If $\overline{XY} \parallel \overline{BC}$ AY = 64, YC = 16, and XB = 10, Find AX.



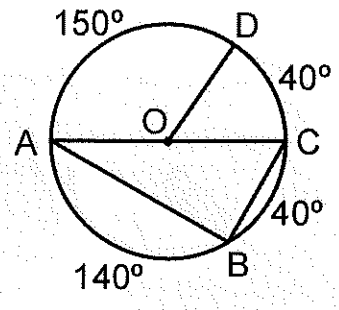
21. Find x in simplified radical form.



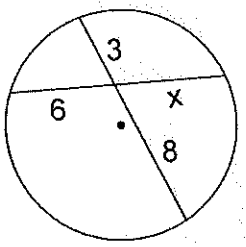
22. When the sun's angle of elevation is 55°, a tree casts a shadow of 36 feet. How tall is the tree to the nearest tenth?

Sin 55 = .8192
Cos 55 = .5736
Tan 55 = 1.4281

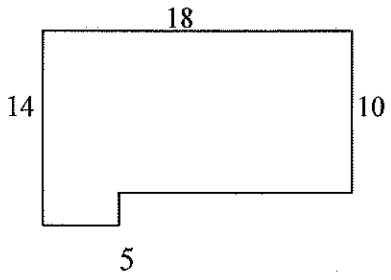
23. Given circle O, find $m \angle ACB$.



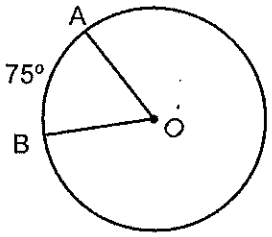
24. Given two intersecting chords within a circle. Find x.



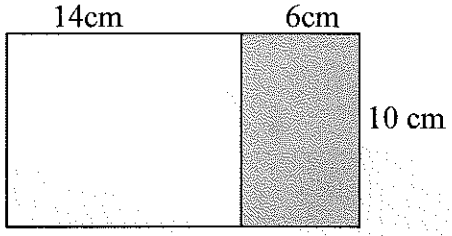
25. Find the area of the figure. Assume right angles.



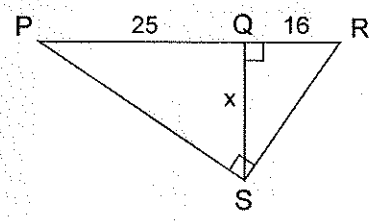
26. In circle O, OB = 6 and $m\overset{\frown}{AB} = 75°$. Find the area of sector AOB to the nearest 10^{th}.



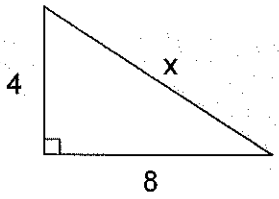
27. A dart is thrown at random at the board shown. If the dart hits the board, find the probability that it will land in the shaded area.



28. If QR = 16 and PQ = 25, then find QS.



29. For the right triangle, solve for *x.* in simplified radical form.

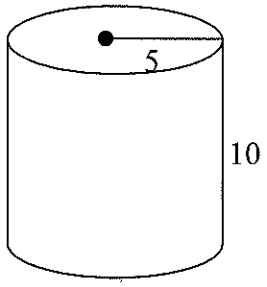


30. The hypotenuse of a 30° - 60° - 90° triangle measures 12.

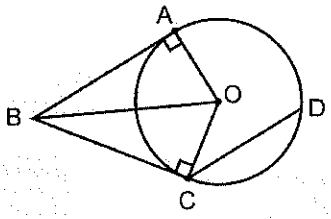
a. How long is the leg opposite the 60° angle?

b. How long is the leg adjacent the 60° angle?

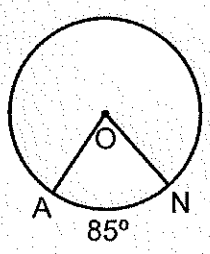
31. Find the volume of the cylinder.



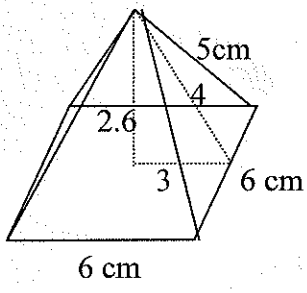
32. Given circle O, if $\overline{CB} = 22$. Find the length of $\overline{AB}$.



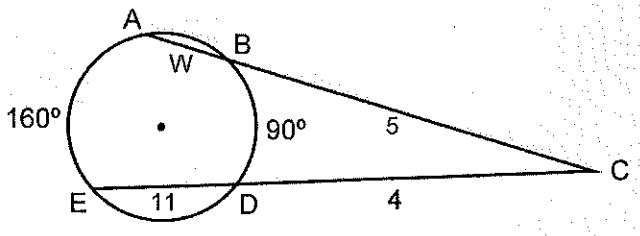
33. Given circle O with $m\widehat{AN} = 85°$, find $m\angle NOA$.



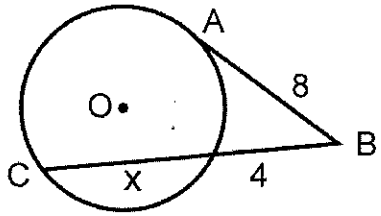
34. Find the total surface area of the pyramid.



35. Given circle O, find w.



36. Given tangent $\overline{AB}$ to circle O, find x.

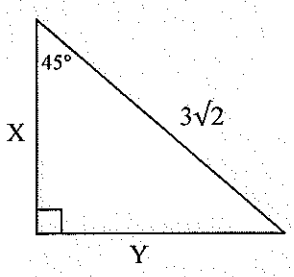


37. Given the volume of a cone is 18π cm^3 and the height of the cone is 6 cm, find the radius of the cone.

38. What is the center and radius of the circle $(x-5)^2 + (y+6)^2 = 9$

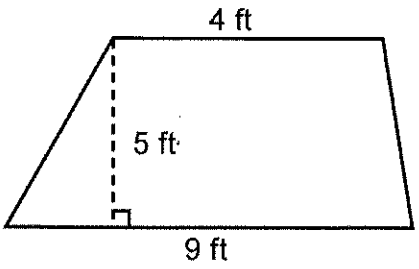
39. Find the area of a circle with a circumference of 12π. Leave answer in π units.

40. Find the values of X and Y.

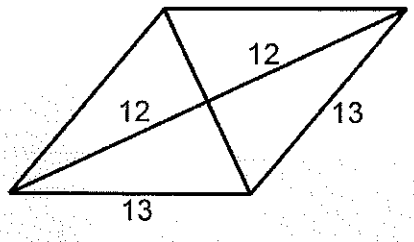


41. Find the area of the triangle if the height is 4 feet and the base is 10 feet long.

42. Find the area of the trapezoid.

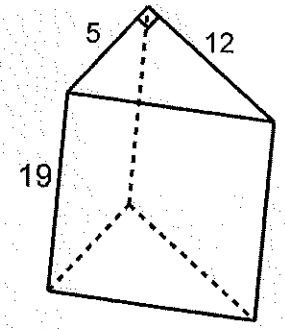


43. Find the area of the rhombus.

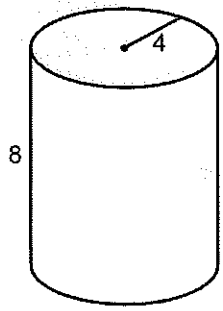


44. Find the area of a regular pentagon if its apothem is 5.5 and each of its sides is 8.

45. Find the total surface area of the prism.



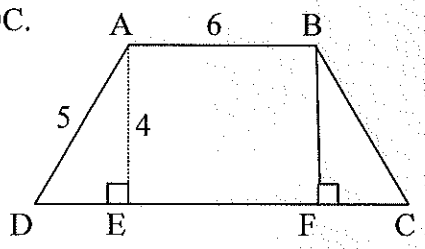
46. Find the **lateral** area of the right circular cylinder. Leave answer in π units.



47. Find the volume of the sphere with radius 6 units. Leave answer in π form.

48. The base of a triangle is 12 cm and the area is $54cm^2$. Find the height of the triangle.

49. If $\overline{AD} \cong \overline{BC}$ in isosceles trapezoid ABCD, find DC.



50. The two polygons are similar. The area of one polygon is given. Find the area of the larger polygon to the nearest 10^{th}.