Mixed Review Exercises

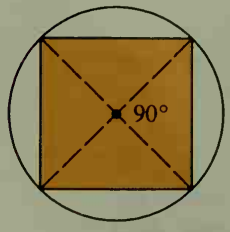
Complete.

1. In $\odot O$, if the measure of central angle AOB is 52, then the measure of arc AB is $\underline{?}$.
2. In $\odot P$, if the measure of inscribed angle RST is 73, then the measure of arc RT is $\underline{?}$.
3. The measure of each interior angle of a regular octagon is $\underline{?}$.
4. If the measure of each exterior angle of a regular polygon is 20, then the polygon has $\underline{?}$ sides.
5. In a 45°-45°-90° triangle with legs 20 cm long, the length of the altitude to the hypotenuse is $\underline{?}$.
6. In a 30°-60°-90° triangle with hypotenuse 30 cm long, the lengths of the legs are $\underline{?}$ and $\underline{?}$.
7. In an isosceles triangle with vertex angle of 60° and legs 10 m long, the length of the base is $\underline{?}$.
8. In $\triangle ABC$ if $m\angle C = 90$, $AC = 8$, and $AB = 17$, then $\cos B = \underline{?}$.

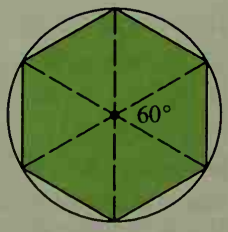
11-4 *Areas of Regular Polygons*

The beautifully symmetrical designs of kaleidoscopes are produced by mirrors that reflect light through loose particles of colored glass. Since the body of a kaleidoscope is a tube, the designs always appear to be inscribed in a circle. The photograph of a kaleidoscope pattern at the right suggests a regular hexagon.

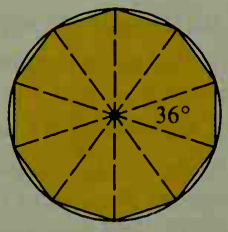
Given any circle, you can inscribe in it a regular polygon of any number of sides. The diagrams below show how this can be done.



Square in circle: draw four 90° central angles.



Regular hexagon in circle: draw six 60° central angles.



Regular decagon in circle: draw ten 36° central angles.