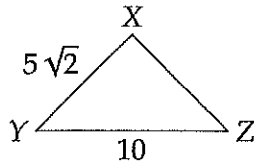


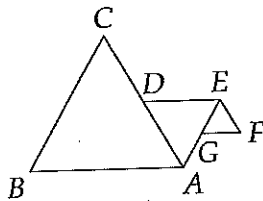
Problem Set: Perimeter/Area

Do all work on a separate sheet of paper and show the appropriate units.

1. In the diagram below, $XY = 5\sqrt{2}$, $YZ = 10$, and $\angle Y = \angle Z = 45^\circ$. Find the perimeter of $\triangle XYZ$.



2. Triangles ABC , ADE , and EFG at right above are all equilateral. Points D and G are midpoints of \overline{AC} and \overline{AE} , respectively. If $AB = 4$, what is the perimeter of $ABCDEFGH$?



3. Must two congruent triangles have the same perimeter? Why or why not?
4. Must triangles with the same perimeter be congruent? Why or why not?
5. A triangle with perimeter 45 has one side that is twice as long as the shortest side and another side that is 50% longer than the shortest side. Find the length of the shortest side of the triangle.
6. A square poster is replaced by a rectangular poster that is 2 inches wider and 2 inches shorter. What is the difference in the number of square inches between the area of the larger poster and the smaller poster?
7. Find the area of a circle with diameter 18 inches.
8. Find the area of a circle that has circumference 12π .

9. Find the radius of a circle that is numerically equal to its area.
10. If a pizza that is 12 inches in diameter provides four full meals, how many meals are provided by a pizza that is 20 inches in diameter?
11. Points A and B are on the circumference of circle O such that $\angle AOB = 120^\circ$ and $OA = 12$.
- Find the area of circle O.
 - Find the area of sector AOB.
12. \widehat{AC} of circle O has length 12π , and the circle has radius 18.
- Find $\angle AOC$.
 - Find $\angle AOC$.