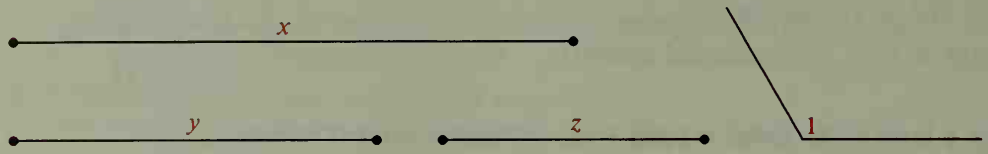
Chapter Test

Begin by drawing segments and an angle roughly like those shown.



1. Construct an isosceles triangle with vertex angle congruent to $\angle 1$ and legs of length z.
2. Construct a 30°-60°-90° triangle with shorter leg of length y.
3. Construct a segment of length $\sqrt{xy}$.
4. Construct a segment of length $\frac{2}{3}(y + 2z)$.
5. Construct a segment of length n such that $\frac{x}{z} = \frac{y}{n}$.
6. Draw a large circle and a point K not on the circle. Using K as one vertex, construct any triangle that is circumscribed about the circle.
7. Draw a large triangle and construct the circle inscribed in the triangle.
8. In a right triangle **(a)** the ___?___ of the triangle intersect at a point on the hypotenuse, **(b)** the ___?___ intersect at a point inside the triangle, and **(c)** the altitudes of the triangle intersect at a ___?___ of the triangle.
9. An isosceles triangle has sides of length 5, 5, and 8.
   a. What is the length of the median to the base?
   b. When the three medians are drawn, the median to the base is divided into segments with lengths ___?___ and ___?___.
10. Given points R and S in plane Z, what is the locus of points **(a)** in Z and equidistant from R and S and **(b)** in space and equidistant from R and S?
11. Given points T and U 8 units apart, what is the locus of points, in space, that are 6 units from T and 4 units from U?
12. Draw a line l and a point A on it. Using y and z from Exercises 1–5, construct the locus of points z units from l and y units from A.