

Line Segments in a Circle

For each problem draw and label a diagram, show all work. Use a separate sheet if necessary.

1. AC is a chord of circle D. B is the midpoint of AC. If $AC=30''$ and $BD=12''$, find the diameter of the circle.
2. A point T is $36''$ from the center of a circle of radius $12''$. Find the length of the tangents drawn from T.
3. Two parallel chords of a circle of diameter $32'$ are each $8'$ long. How far apart are the chords?
4. Two concentric circles have radii of $12''$ and $22''$. Find the length of a chord of the larger circle that is tangent to the smaller circle.
5. A chord of $4''$ long is $8''$ from the center of a circle. How long is a chord that is $6''$ from the center of the same circle?
6. Two circles have diameters of $28''$ and $13''$. How far apart are the centers of the circles if the length of a common external tangent is $34''$?
7. Two parallel congruent chords of a circle of diameter of $36''$ are $10''$ apart. How long is each chord?
8. A point T is $20''$ from a circle of diameter $12''$. How long is a tangent to the circle drawn from point T?
9. Two externally tangent circles have radii of 9cm and 23cm respectively. Find the length of a common external tangent.
10. RS is a chord of circle O. OT is drawn perpendicular to RS. If $\angle RSO = 45^\circ$ and $RT=10''$, find the diameter of the circle.