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Date \_\_\_\_\_ Geometry

## **Circle Rules Practice**

1. In the diagram below of circle *O*, chords  $\overline{AB}$  and  $\overline{CD}$  intersect at *E*. If  $\widehat{mAC} = 72^{\circ}$  and  $\underline{m}\angle AEC = 58^{\circ}$ , how many degrees are in  $\underline{mDB}$ ?



2. In the diagram,  $\overline{AD}$  is tangent to circle *O* at *D*, and  $\overline{CBA}$  is a secant. If AD = 6 and AC = 9, what is *AB*?



3. If AC = 150°, AH = 70°, find  $m \angle APH$ 



4. In the diagram below of circle O,  $\overline{PA}$  is tangent to circle O at A, and  $\overline{PBC}$  is a secant with points B and C on the circle.

If PA = 8 and PB = 4, what is the length of  $\overline{BC}$ ?



5. If  $\overline{BR} = 10$ ,  $\overline{BE} = 4$ ,  $\overline{AE} = 8$ , find  $\overline{ES}$ 



6. As shown in the diagram below, secants  $\overrightarrow{PWR}$  and  $\overrightarrow{PTS}$  are drawn to circle O from external point P.

If  $m \angle RPS = 35^\circ$  and  $\widehat{mRS} = 121^\circ$ , determine and state  $\widehat{mWT}$ .



7. In the diagram below of circle *O*, chords  $\overline{AB}$  and  $\overline{CD}$  intersect at *E*. If CE = 10, ED = 6, and AE = 4, what is the length of  $\overline{EB}$ ?



8. In the diagram below of circle *O*, chords  $\overline{AE}$  and  $\overline{DC}$  intersect at point *B*, such that  $\widehat{mAC} = 36$  and  $\widehat{mDE} = 20$ . What is  $\underline{m} \angle ABC$ ?



9. In the diagram below, secants  $\overline{RST}$  and  $\overline{RQP}$ , drawn from point *R*, intersect circle *O* at *S*, *T*, *Q*, and *P*.

If RS = 6, ST = 4, and RP = 15, what is the length of  $\overline{RQ}$ ?



10. In the diagram below of circle *O*, chords  $\overline{AB}$  and  $\overline{CD}$  intersect at *E*. If  $m \angle AEC = 34$  and  $\widehat{mAC} = 50$ , what is  $\widehat{mDB}$ ?



11. In the diagram of circle *O* below, chord  $\overline{AB}$  intersects chord  $\overline{CD}$  at *E*, DE = 2x + 8, EC = 3, AE = 4x - 3, and EB = 4. What is the value of *x*?



12. In the diagram of circle *O*,  $\overline{PQ}$  is tangent to *O* at *Q* and  $\overline{PRT}$  is a secant. If  $m \angle P = 56$  and mQT = 192, find mQR

