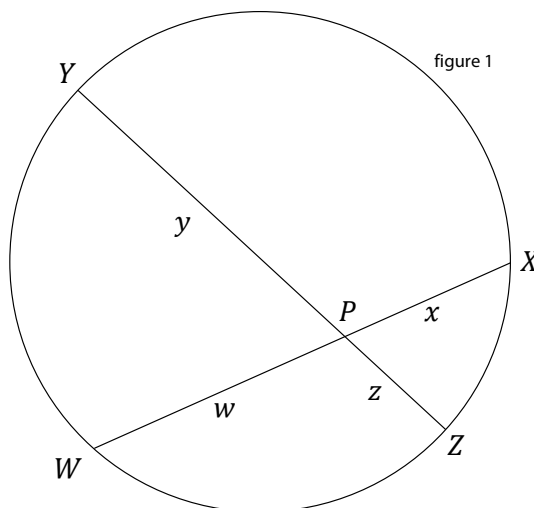


» Circle Geometry | Challenging Questions on Intercepts

Where diagrams are not provided, draw one of your own.

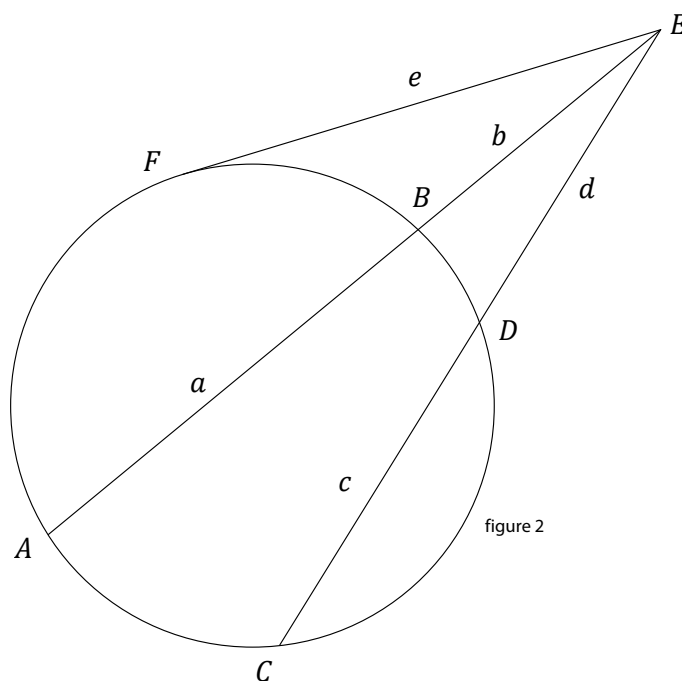
1. In figure 1, find:

- z , if $w = 3$, $x = 4$, $y = 6$.
- y , if $w = 12$, $x = 4$, $y = 8$.
- YZ , if $WX = 11$, $PX = 5$, $PZ = 2$.
- WX , if $YP = 9$, $PZ = 4$, $WP = PX$.



2. In figure 2, find:

- c , if $a = 7$, $b = 3$, $d = 5$.
- e , if $a = 6$, $b = 2$.
- c , if $e = 6$, $d = 4$.
- d , if $a = 3$, $b = 5$, $c = 6$.



3. AB and AC are two chords of a circle. Any line parallel to the tangent at A cuts AB and AC at D and E respectively. Prove that $AB \times AD = AC \times AE$.

4. Chord EF on a circle is produced to form secant EQ , such that the chord is three times longer than the intercept FQ . Prove that the tangent QT is two-thirds the length of EF .

5. AB and AC are two equal chords of a circle; AP is another chord of the circle that cuts BC at Q . Prove that $AP \times AQ = AB^2$.

6. A pendulum of length 20cm is attached to a point 31cm above the floor. It is set swinging so that the horizontal distance between the extreme positions of the bob is 24cm. Calculate the height of the bob above the floor at each extreme position.