Geometry Workbook

Triangles

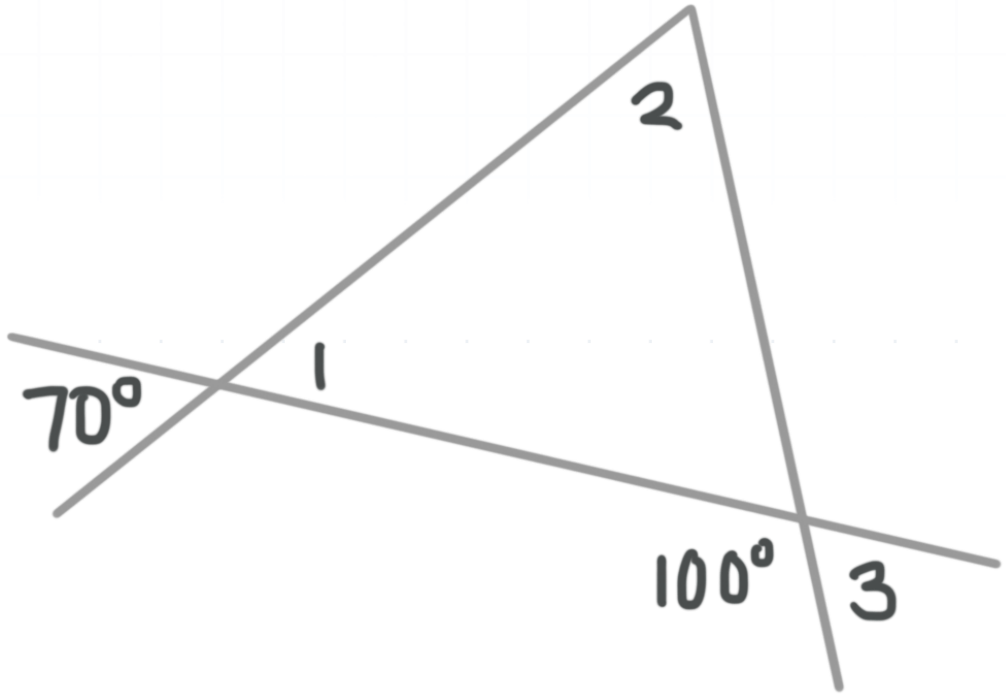
krista king
MATH

INTERIOR ANGLES OF TRIANGLES

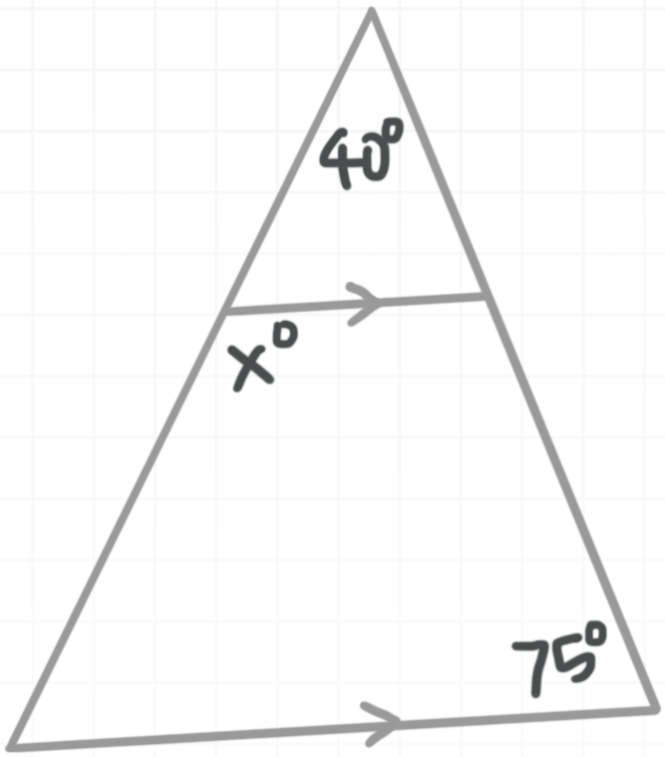
■ 1. $\triangle LMN$ is a right, isosceles triangle where $\angle M$ is the vertex angle. Find $m\angle L$, $m\angle M$, and $m\angle N$.

■ 2. $\triangle ABC$ has $m\angle A = 3x + 5$, $m\angle B = 10x + 5$, and $m\angle C = 4x$. Find the value of x and determine whether this is an obtuse, acute, or right triangle.

■ 3. Find $m\angle 1$, $m\angle 2$, and $m\angle 3$ from the figure.

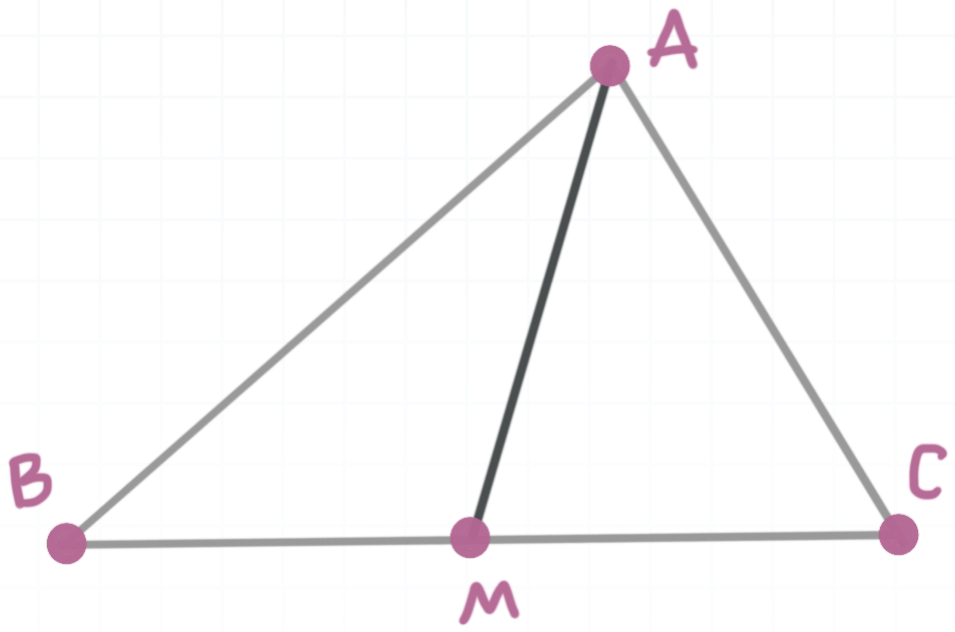


■ 4. Find the value of x from the figure.

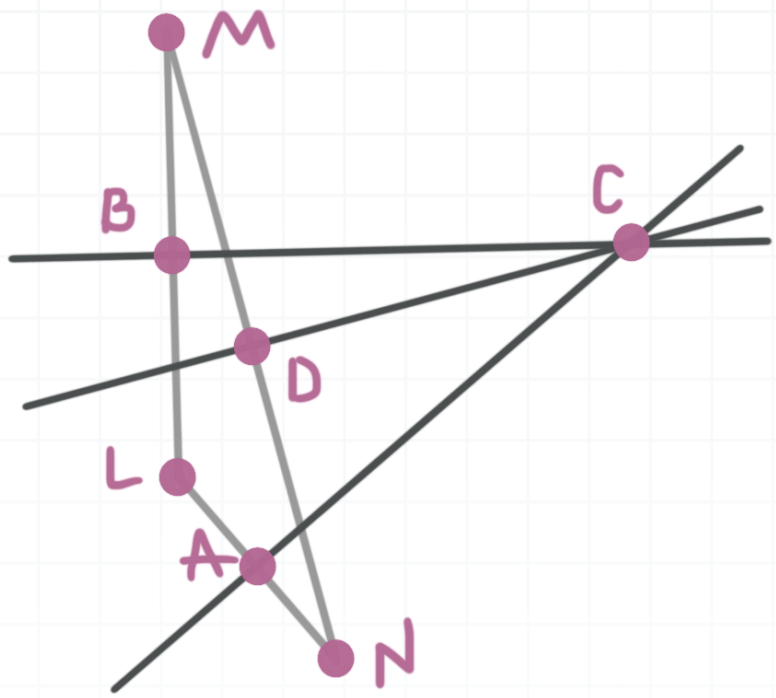


PERPENDICULAR AND ANGLE BISECTORS

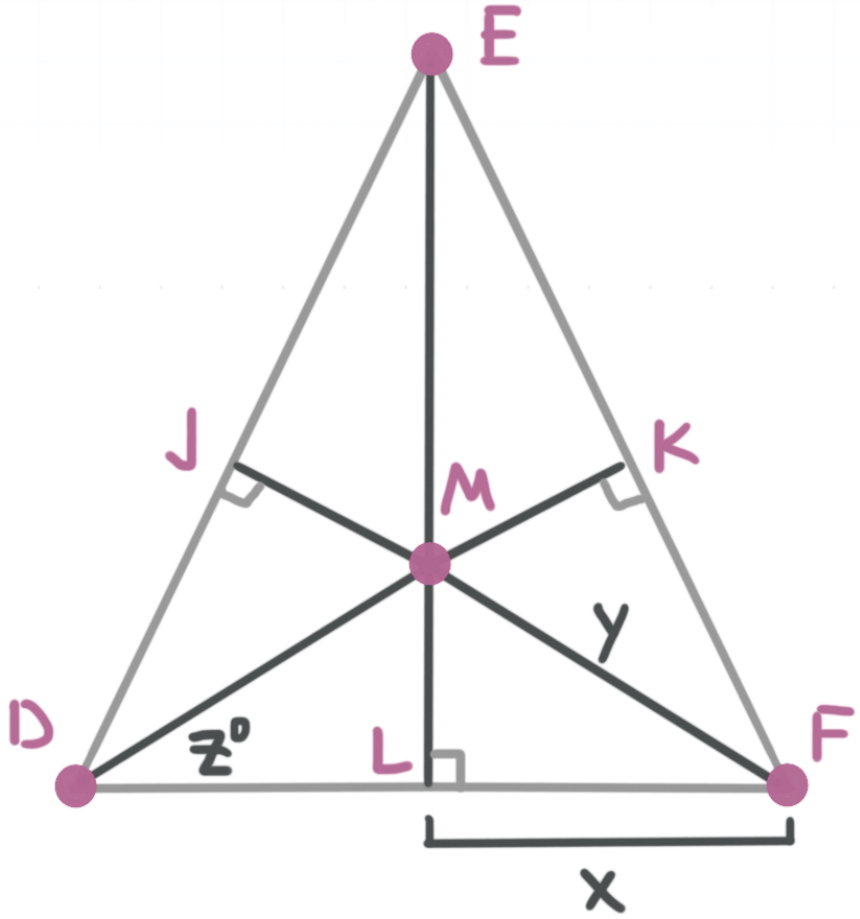
■ 1. $\overline{AM}$ is an angle bisector of $\triangle ABC$. $m\angle BMA = 108$ and $m\angle MBA = 40$. Find x if $m\angle CAM = 2x + 12$.



■ 2. $\overline{AC}$, $\overline{DC}$, and $\overline{BC}$ are perpendicular bisectors of $\triangle NLM$. Give the special name for C and find the length of ND if $NM = 14x - 22$ and $DM = 3x + 1$.



■ 3. Find the values of x, y, and z, given M is an incenter, $MK = 6$, $FK = 8$, and $m\angle EDF = 80$.

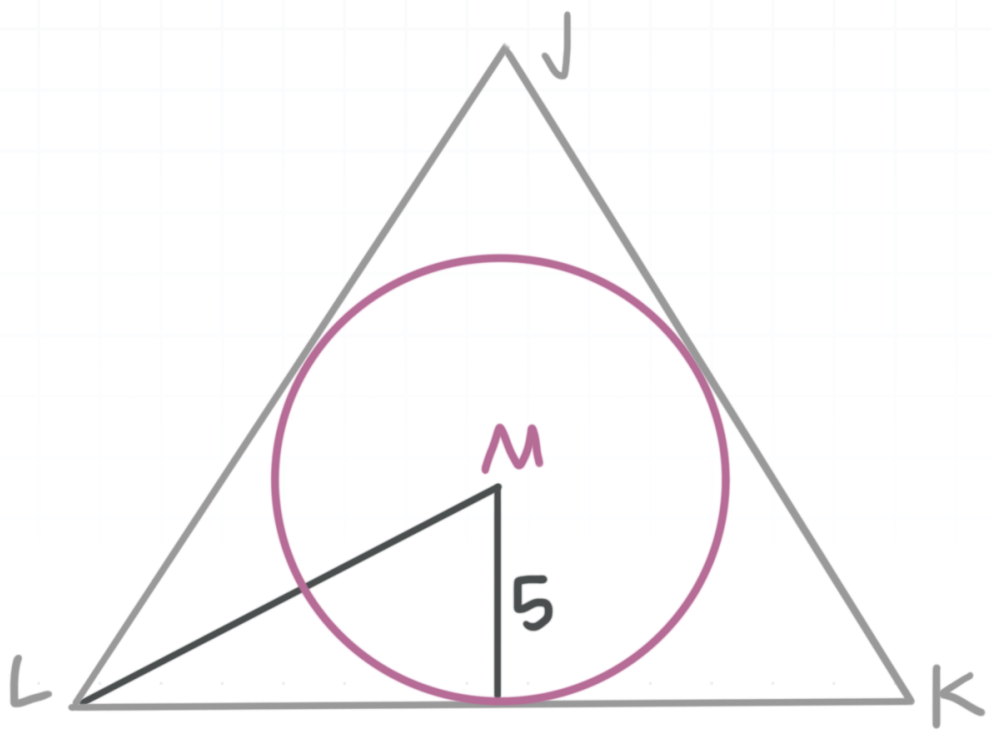


4. $\triangle ABC$ has coordinates $A(-3,1)$, $B(3,3)$, and $C(2,-2)$. Write the equation for the perpendicular bisector of $\overline{AB}$.

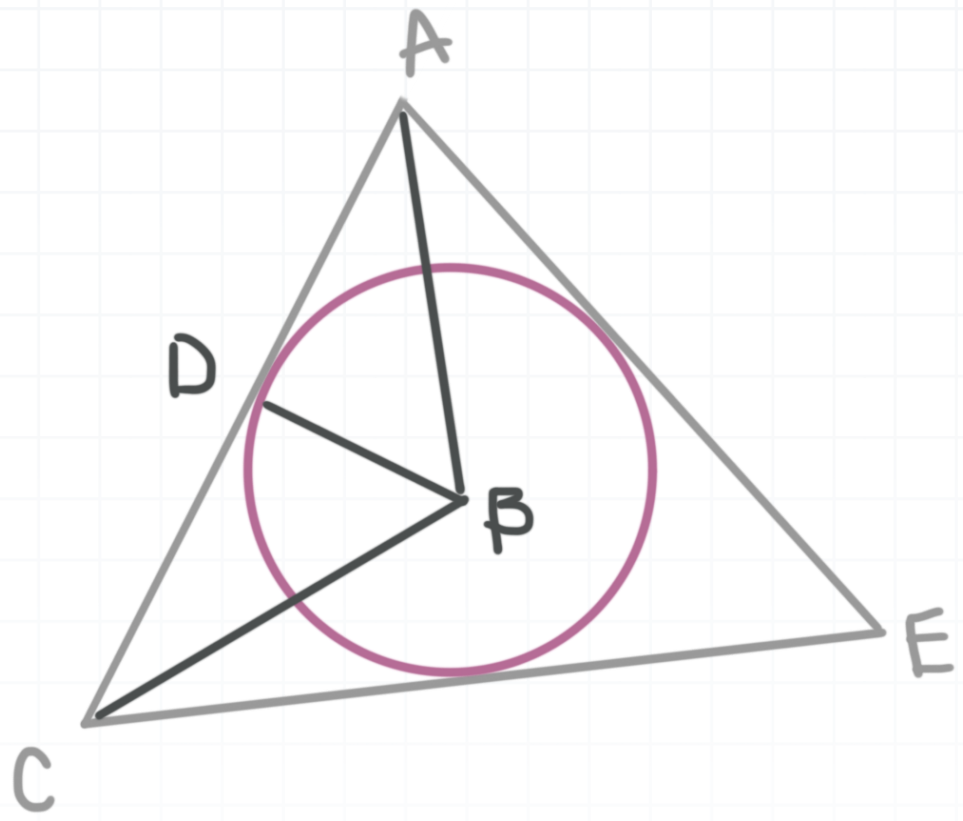
CIRCUMSCRIBED AND INSCRIBED CIRCLES OF A TRIANGLE

■ 1. Equilateral triangle ABC is inscribed in $\odot D$. Find $m\angle ADC$.

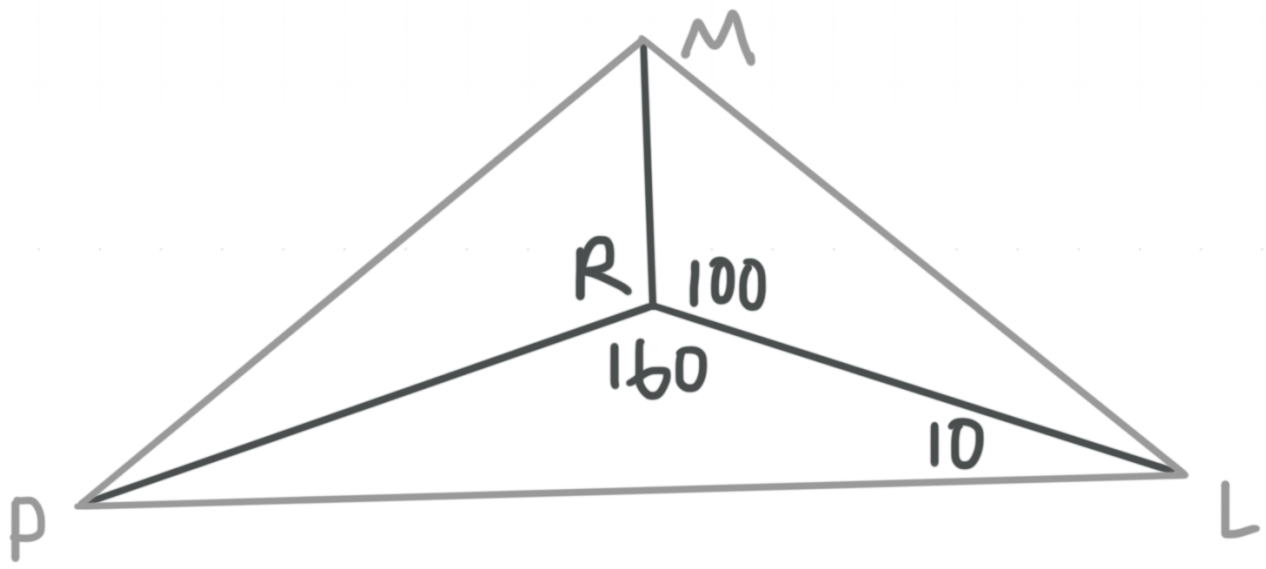
■ 2. $\triangle JKL$ is equilateral and is circumscribed about $\odot M$. The radius of $\odot M$ is 5. Find the perimeter of $\triangle JKL$.

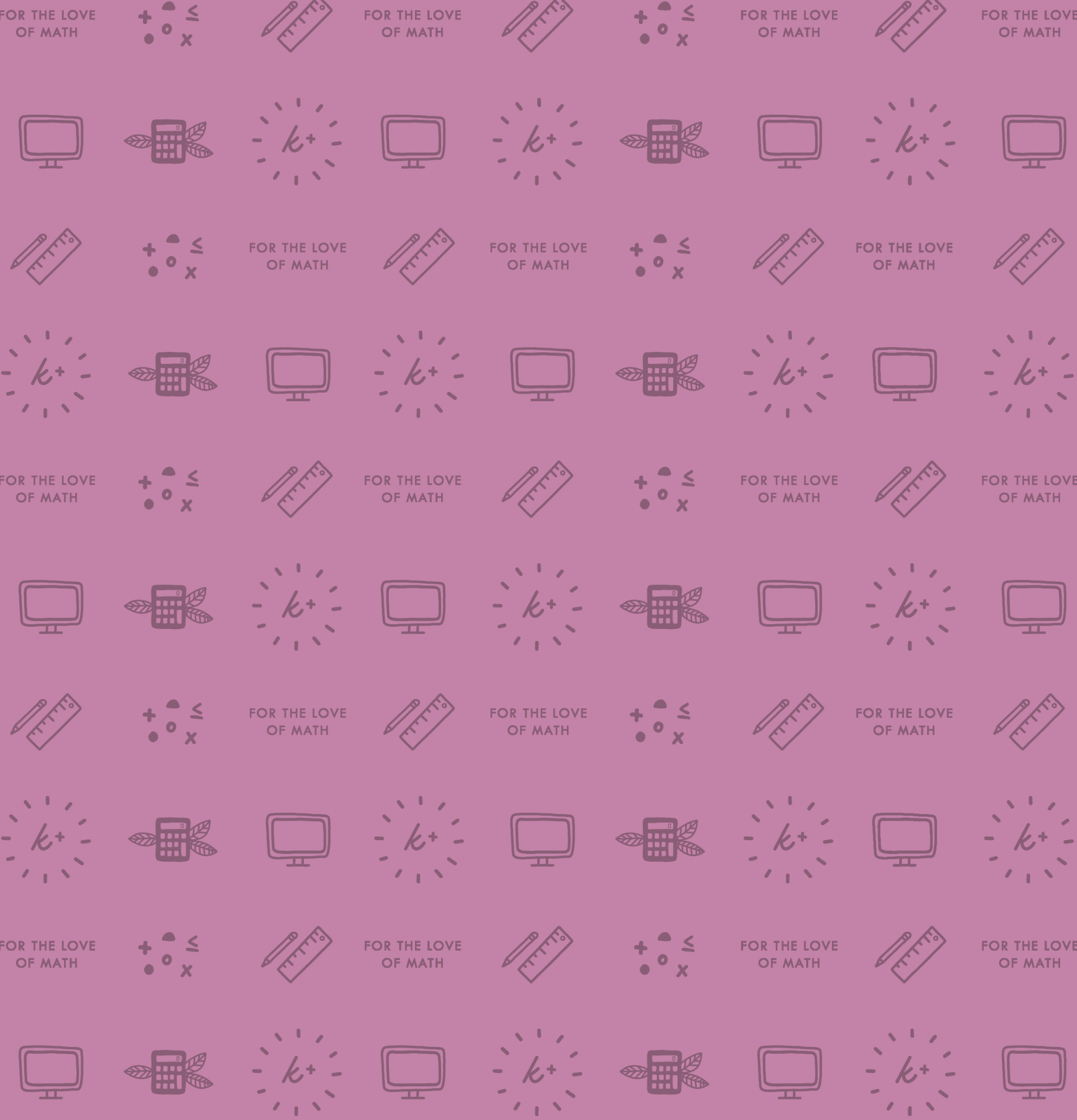


■ 3. If $\triangle ACE$ is an equilateral triangle, if $\odot B$ is inscribed in $\triangle ACE$, and if $\overline{AB} = 12$, find the length of the radius of $\odot B$. Hint: any triangle with three interior angles $30°$, $60°$, and $90°$ have a side length ratio of x, $\sqrt{3}x$, and $2x$, respectively.



4. R is the incenter of $\triangle PML$. Find $m\angle PMR$.





WWW.KRISTAKINGMATH.COM