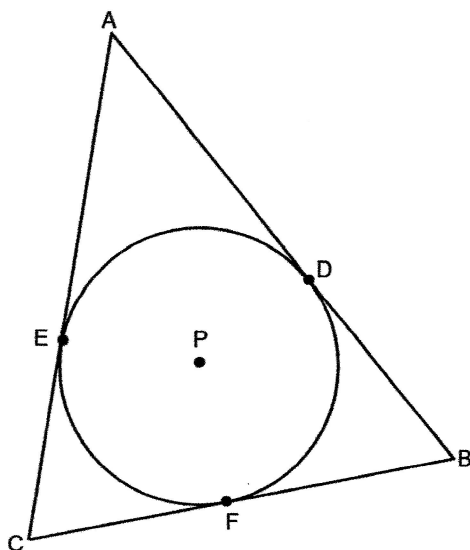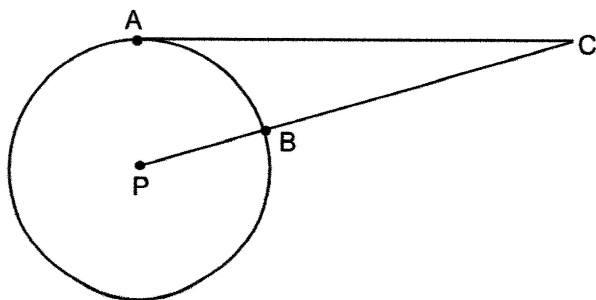1. $\triangle ABC$ is tangent to $\odot P$ at points $E, F,$ and D.
Given $AB = 20$ $CE = 6$ $BF = 8$ find the perimeter of $\triangle ABC$.

2. $\overline{AC}$ is tangent to $\odot P$ at pt A.
Given $AC = 20$ and $CP = 23$, find the radius of $\odot P$ to the nearest hundredth.

Bellwork   Geo   Monday, May 4, 2020   ANSWERS

1. $\triangle ABC$ is tangent to $\odot P$ at points $E, F,$ and D.
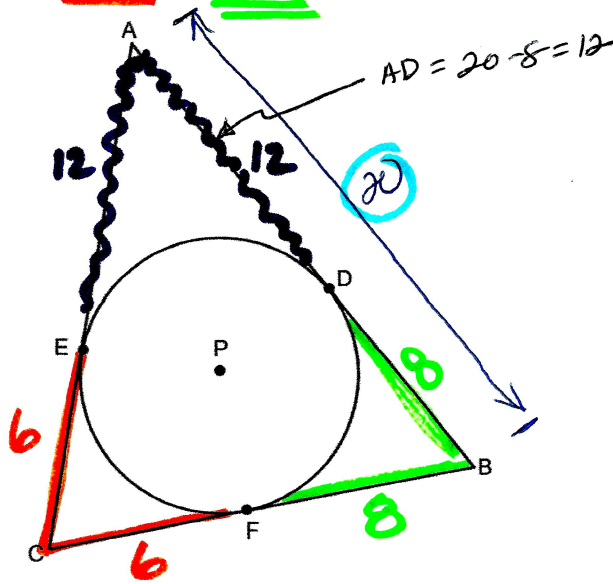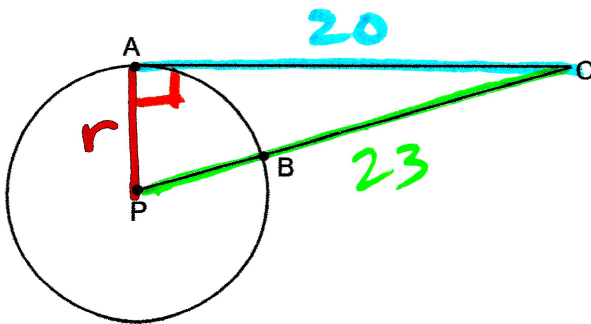Given $AB = 20$ $CE = 6$ $BF = 8$ find the perimeter of $\triangle ABC$.

A
12   12
E   P   D
6   8
C   F   B
6   8

AD = 20 - 8 = 12

20

perimeter $\triangle ABC$

$= AB + BC + CA$

$= 20 + (6+8) + (6+12)$

$= 20 + 14 + 18$

perimeter = 52

2. $\overline{AC}$ is tangent to $\odot P$ at pt A.
Given $AC = 20$ and $CP = 23$, find the radius of $\odot P$ to the nearest hundredth.

A   20   C
r
P   B   23

① Draw radius $\overline{PA}$ which forms a right angle at point A.

② Now use pythagorean theorem:

$23^2 = r^2 + 20^2$

$\sqrt{r^2} = \sqrt{23^2 - 20^2}$

$r = 11.36$

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