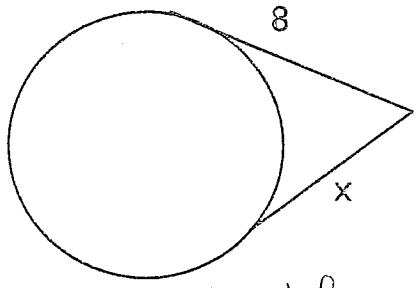
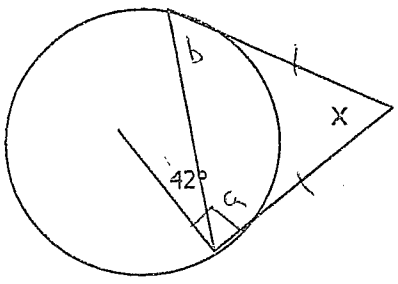
Pm 9 Equal Tangent Property Name:

1.



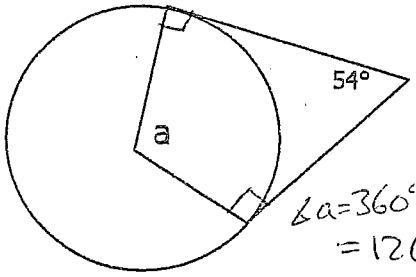
x = 8 (tangents from external pt. are =)

2.



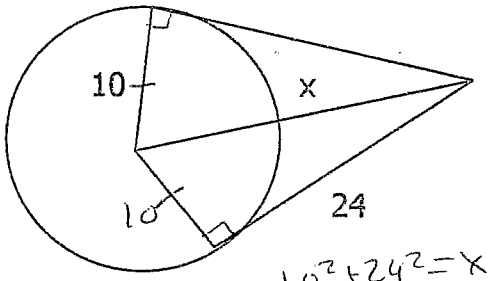
∠a = 48° (90-42°)
∠b = ∠a = 48°
∠x = 84°

3.



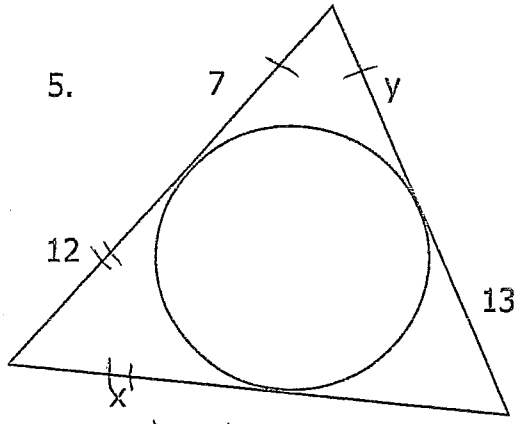
∠a = 360° - 54 - 90 - 90
= 126°

4.



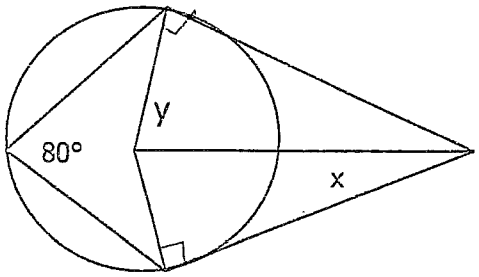
$10^2 + 24^2 = x^2$
$100 + 576 = x^2$
$\sqrt{676} = \sqrt{x^2}$
$26 = x$

5.

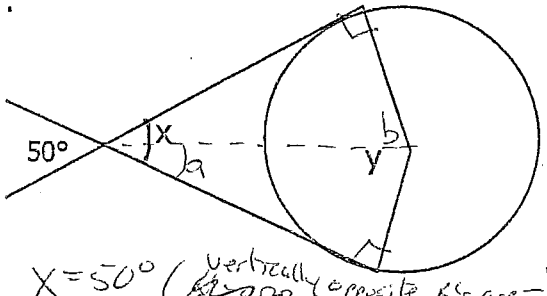


x = 12 tangents from external pt are =
y = 7

6.

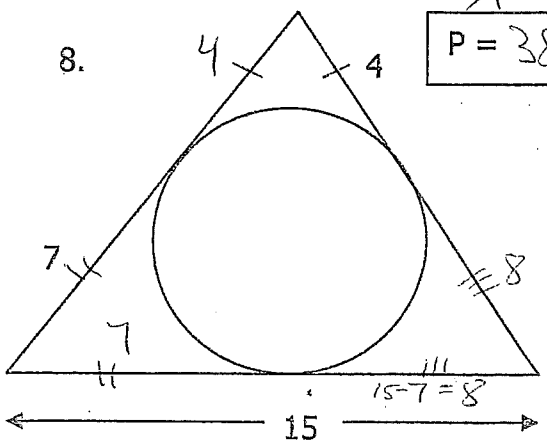


7.



x = 50° (vertically opposite ∠s are =)
∠a = ½ of x = 25°
∠b = 65° (∠s in a Δ add to 360°)
∠y = b + b = 65° + 65° = 130°

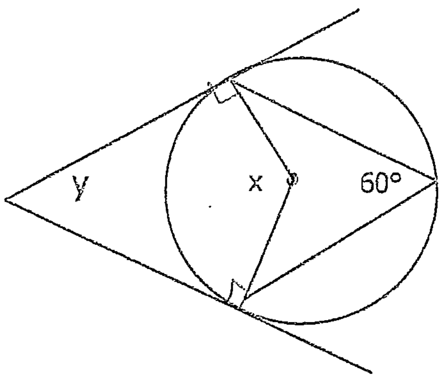
8.



perimeter
P = 38

P = 15 + 12 + 11 = 38

9.



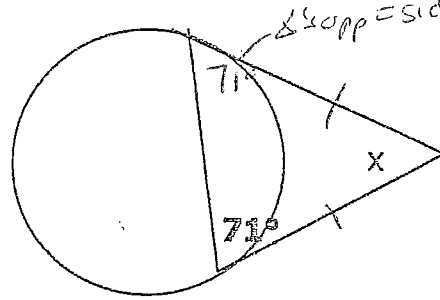
X = 120° (central angle double inscribed)

y = 60° (∡'s in quadrilateral add to 360°

↳ 360 − 120 − 90 − 90

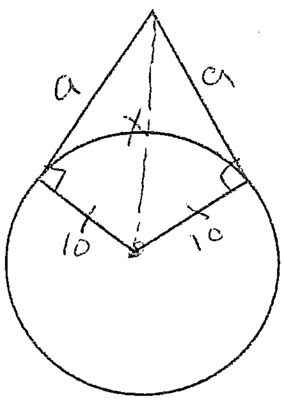
10.

∡'s opp = sides are =



∡x = 38° (∡'s in a △ add to 180°)

11. A circular mirror, 20 cm in diameter, is hung by two strings to the wall. If there is a total of 24 cm of string used, how far above the mirror does the nail reach?



① if diameter = 20, radius = 10

② a = 12 (24 ÷ 2)

↳ a is the two strings

③ $10^2 + 12^2 = x^2$

$100 + 144 = x^2$

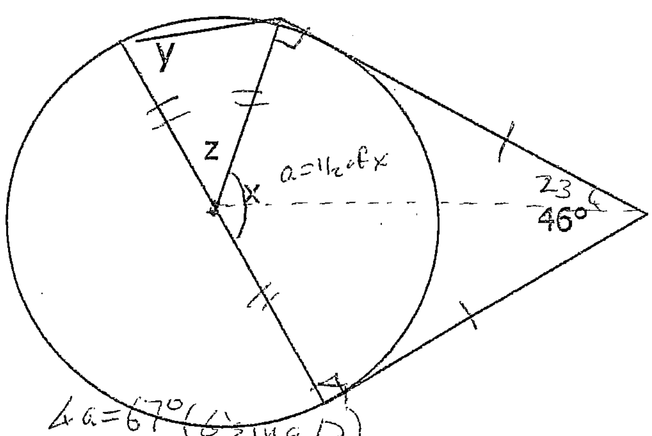
$244 = x^2$

$x = 15.62$

④ height: 15.62 − 10 (radius)

= 5.62 cm

12.



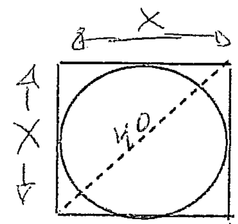
∡a = 67° (∡'s in a △)

∡ x = a + a = 67 + 67 = 134°

∡y = 67° (∡'s opp = sides are = (isosceles △))

∡ did z before ∡y

13. What is the area of the circle inscribed in the square below, if the square has a diagonal length of 40 cm?



$x^2 + x^2 = 40^2$

$\frac{2x^2}{2} = \frac{1600}{2}$

$\sqrt{x^2} = \sqrt{800}$

= 28.28