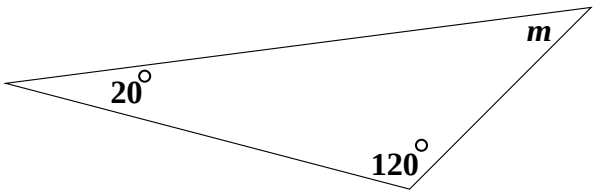
MEMO 2019-8ℰN-00004(1)

(1) Calculate the values of m, n and *p*:

(a)



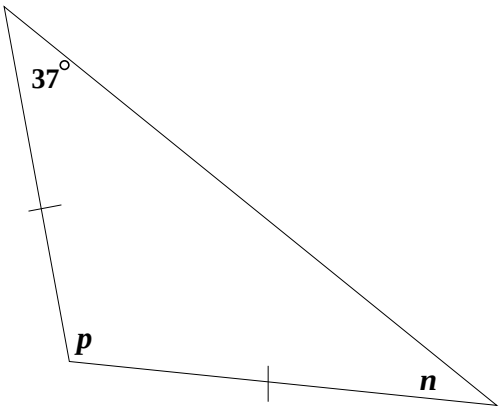
$m + 20° + 120° = 180°$ [Interior $\angle^s$ of Δ]

$m + 140° = 180°$

$m = 180° - 140°$

$\therefore \quad m = 40°$

(b)



$n = 37°$ [$\angle^s$ opposite equal sides]

$p + n + 37° = 180°$ [Interior $\angle^s$ of Δ]

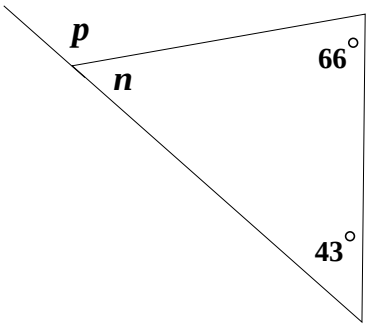
$p + 37° + 37° = 180°$

$p + 74° = 180°$

$p = 180° - 74°$

$\therefore \quad p = 106°$

(c)



$n + 66° + 43° = 180°$ [Interior $\angle^s$ of Δ]

$n + 109° = 180°$

$n = 180° - 109°$

$\therefore \quad n = 71°$

$p + n = 180°$ [Adjacent $\angle^s$ on straight line]

$p + 71° = 180°$

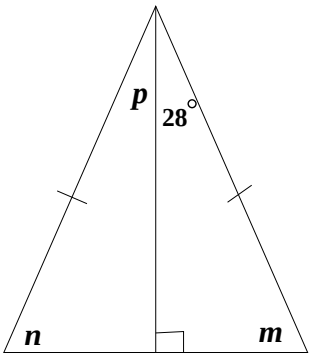
$p = 180° - 71°$

$\therefore \quad p = 109°$

Or $p = 66° + 43°$ [Exterior $\angle$ of Δ]

$\therefore \quad p = 109°$

(d)



$m + 28° + 90° = 180°$ [Interior $\angle^s$ of Δ]

$m = 180° - 118°$

$\therefore \quad m = 62°$

$n = 62°$ [$\angle^s$ opposite equal sides]

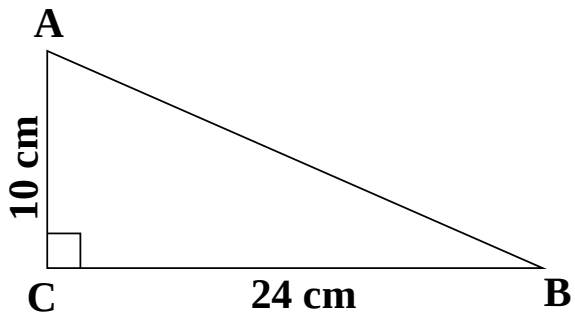
$p + 28° + 62° + 62° = 180°$ [Interior $\angle^s$ of Δ]

$p = 180° - 152°$

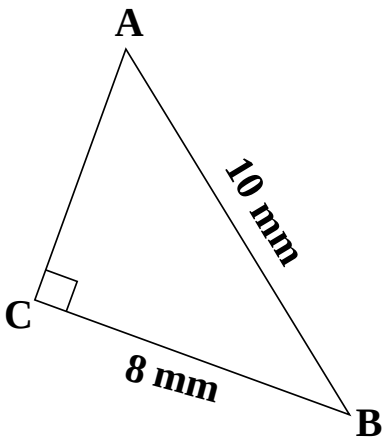
$\therefore \quad p = 28°$

(2) Calculate the length of AB in each of the following triangles:

(a)



(b)



$AB^2 = AC^2 + BC^2$ [Pythagoras]

$AB^2 = 10^2 + 24^2$

$AB^2 = 100 + 576$

$AB^2 = 676$

$\therefore AB = \sqrt{676}$

$\therefore AB = 26\ cm$

$AB^2 = AC^2 + BC^2$

$10^2 = AC^2 + 8^2$

$100 = AC^2 + 64$

$100 - 64 = AC^2$

$AC^2 = 36$

$\therefore AC = \sqrt{36}$

$\therefore AC = 6\ mm$

(3) Calculate the areas of the triangles in (2).

(a) Area $\Delta ABC = \frac{1}{2} B \times \perp H$

Area $\Delta ABC = \frac{1}{2} (24\ cm) \times (10\ cm)$

$\therefore$ Area $\Delta ABC = 120\ cm^2$

(b) Area $\Delta ABC = \frac{1}{2} B \times \perp H$

Area $\Delta ABC = \frac{1}{2} (8\ mm) \times (6\ mm)$

$\therefore$ Area $\Delta ABC = 24\ mm^2$