HOMEWORK... Questions

Worksheet - Primary Trig Ratios.doc
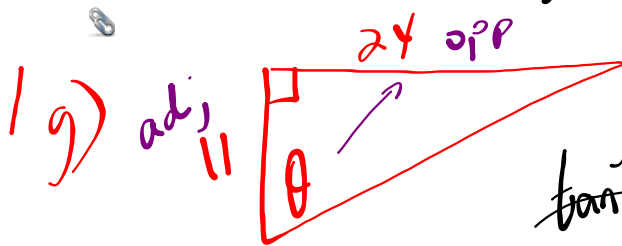
SOH CAH TOA

1 g) adj 11, 24 opp, θ

$$\tan^{-1}\,\tan\theta = \left(\frac{24}{11}\right)$$
$$\tan^{-1}\left(\frac{24}{11}\right)$$

$$\theta = 65°$$

2a) hyp x, 32°, 120 adj

$$\cos 32° = \frac{120}{x}$$

$$x = \frac{120}{\cos 32}$$

$$x = 141.5$$

3. c) OPP b, C, $a = 6.3$ adj, 65, B, 15 hyp, A

$$\angle A = 90 - 65$$
$$\angle A = 25°$$

$$15\cos 65 = \frac{a}{15}(15)$$
$$6.3 = a$$

$$15\sin 65 = \frac{b}{15}(15)$$
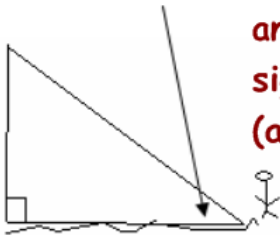$$13.6 = b$$

depression

dev
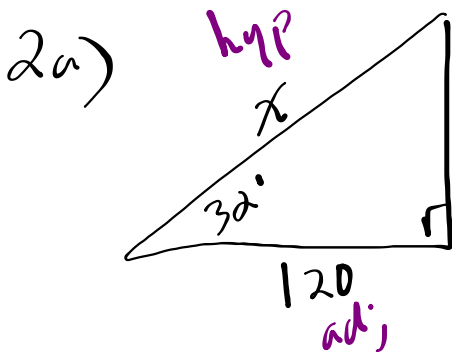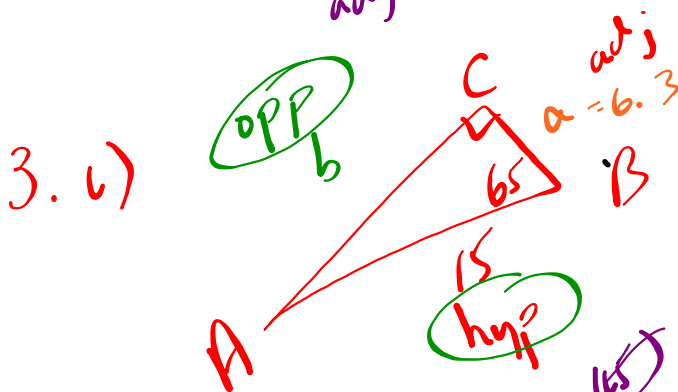
∠ of elevation = ∠ of depression
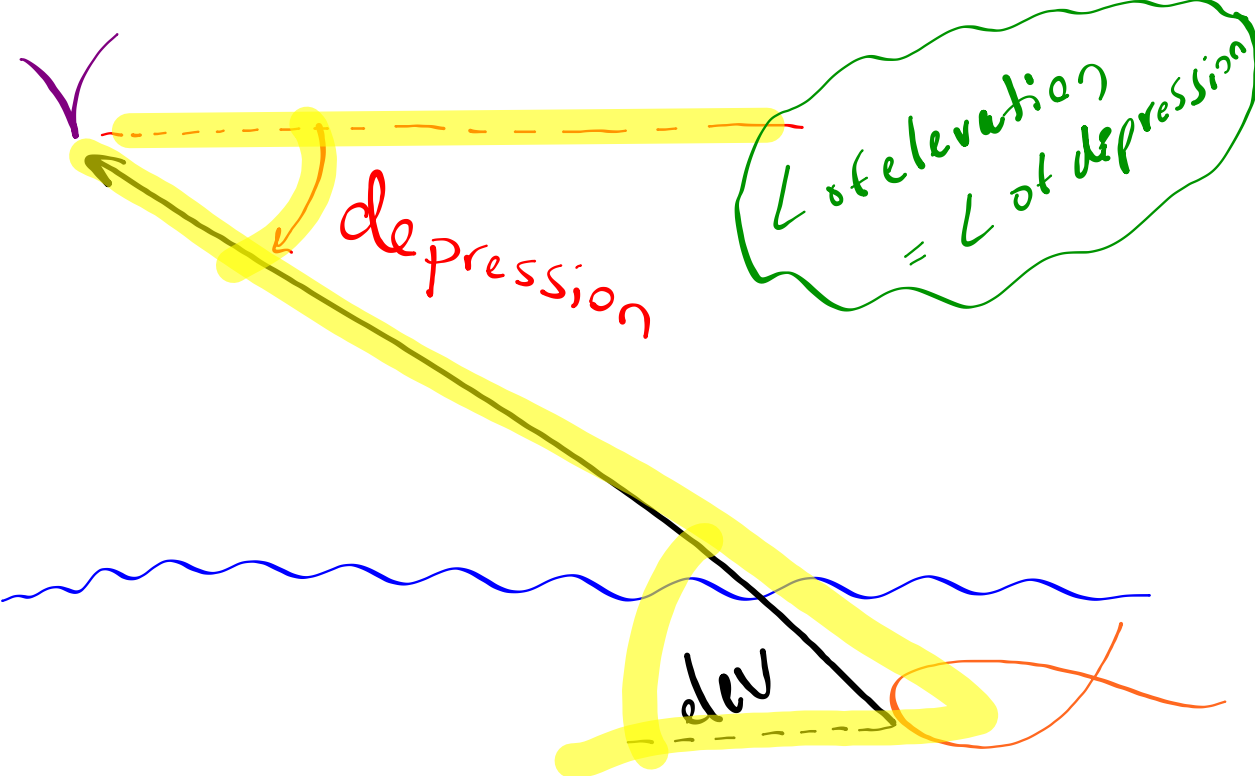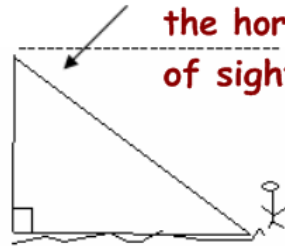
Applications of Right Angle Trigonometry

ANGLE OF ELEVATION/DEPRESSION

Angle of elevation – is the angle between the ground and the line of sight.
(angle of inclination)

Always from the GROUND up

Angle of Depression – is the angle between the horizon and the line of sight.

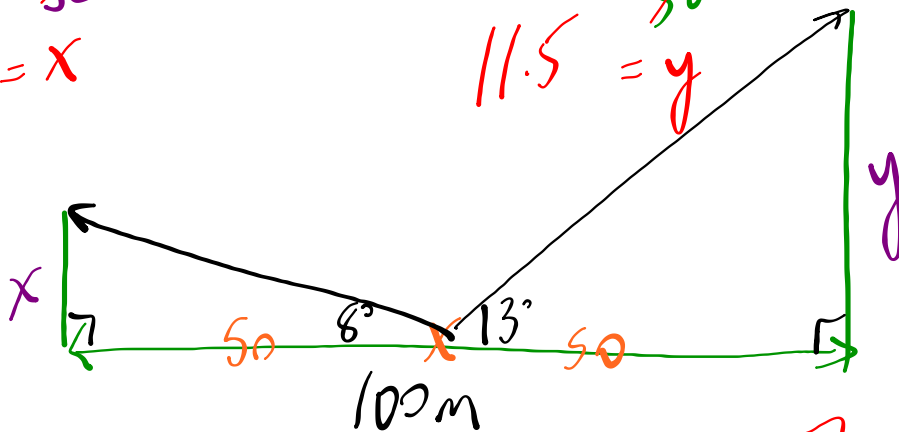Always outside the triangle

Example 1:

Two trees are 100m apart. From a point on midway between them, the angles of elevation to their tops are 8° and 13° How much taller is one tree than the other?

$$\text{so} \quad \tan 8° = \frac{x(50)}{50}$$

$$7.0 = x$$

$$50 \tan 13° = \frac{y(50)}{50}$$

$$11.5 = y$$

x

y

50   8°   x   13°   50

100m
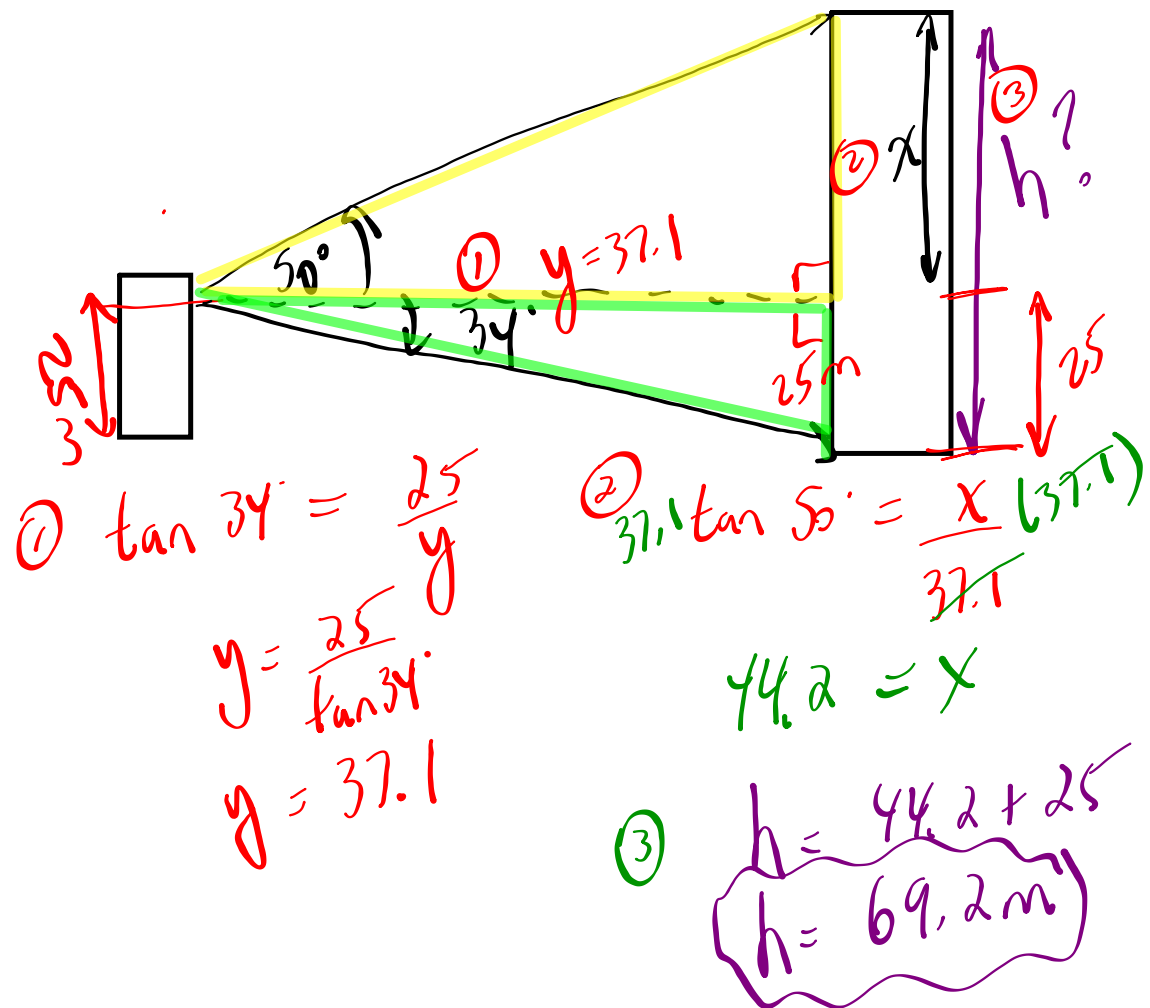
Difference = 11.5 - 7

= 4.5m

Example 2:

The 8th floor of an apartment building is 25m above the ground. From the 8th floor, the angle of elevation to the top of the other building is 50°. The angle of depression to the base of the taller building is 34°. Determine the height of the taller building.

50°

① $y = 37.1$

34°

② x

③ h ?

25m

25

① $\tan 34° = \dfrac{25}{y}$

$y = \dfrac{25}{\tan 34°}$

$y = 37.1$

② $_{37.1}\tan 50° = \dfrac{x}{37.1}(37.1)$

$44.2 = x$

③ $h = 44.2 + 25$

$h = 69.2\,m$

HW. (Solving)
10.7   # 4a, #5a, #6a, 7
(Applications)
10.8   # 1 - 6

Attachments

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