Panel 1

Angle of Incidence = Angle of Reflection

wave

Angle of incidence | Angle of reflection

1 2

Mirror — Reflective Surface

How are angles 1 and 2 related?   They are ≅

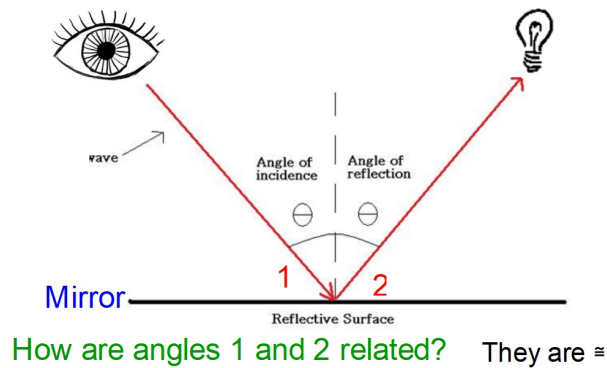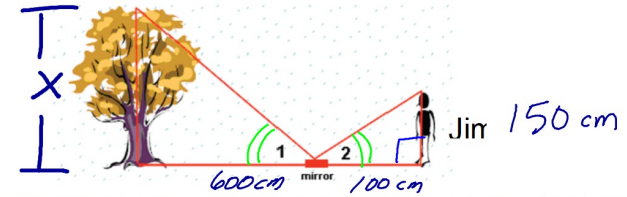## Panel 2

Jim looks at the mirror on the ground and sees the top of the tree.

Why are the two triangles similar?   AA Postulate

Height from the ground to Jim's eyes = 150 cm
Distance from the middle of the mirror to Jim = 100 cm
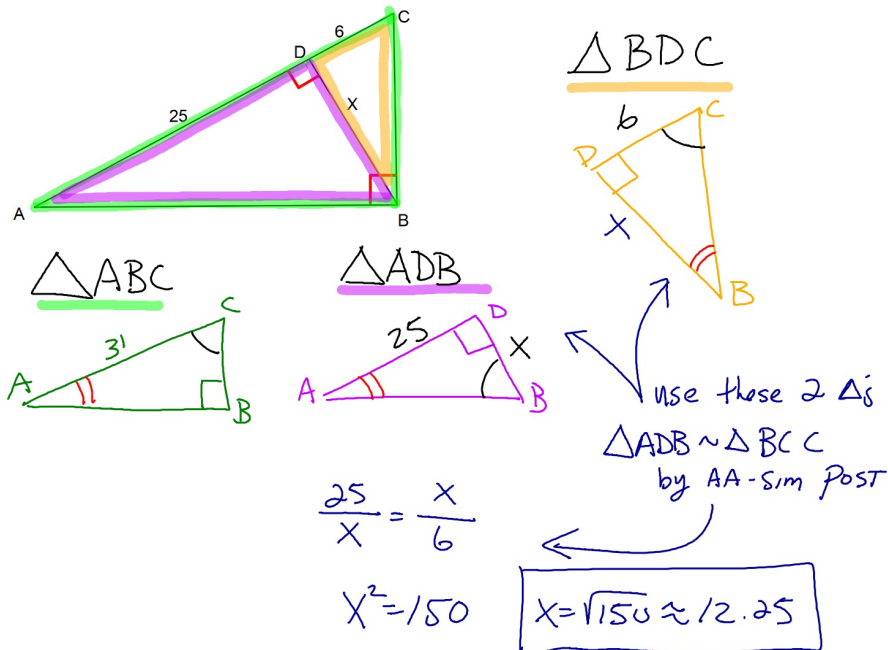Distance from the middle of the mirror to the tree = 600 cm

x

1 2

600cm   mirror   100 cm

Jim   150 cm

How tall is the tree in Meters? (1 meter = 100 cm)

$\triangle$'s are similar by AA-Sim Post.

$$\frac{x}{150} = \frac{600}{100}$$ $x = 900\,cm = 9m$

Panel 3

Find the value of x.

6
C
D
X
25
A   B

$\triangle ABC$

C
3^1
A   B

$\triangle ADB$

25   D
X
A   B

$\triangle BDC$

b   C
D
X
B

use these 2 $\triangle$s

$\triangle ADB \sim \triangle BCC$
by AA-Sim Post

$$\frac{25}{X} = \frac{X}{6}$$

$X^2 = 150$ $X = \sqrt{150} \approx 12.25$

Panel 4

Section 7-5: Proportions in Triangles.

Given: $\overline{AB} \parallel \overline{CD}$

E
9   6
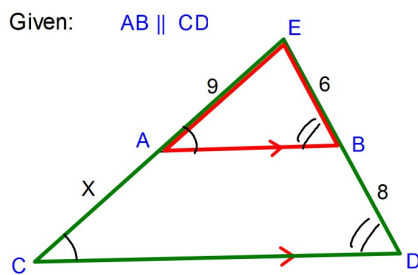A   B
X   8
C   D
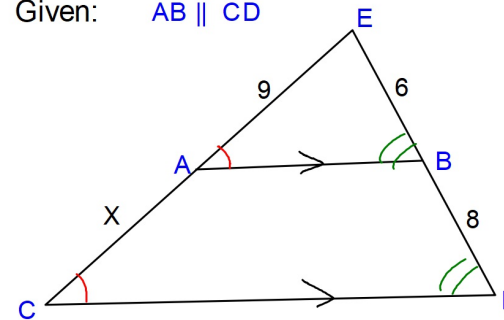
Draw the triangles separately, label the vertices with the variables, and put the lengths on the sides.

Find the value of x
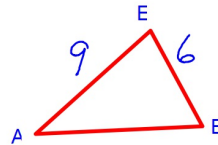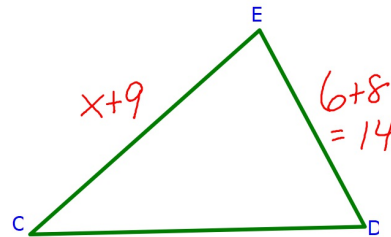
$\triangle$'s are similar by AA-Sim post

Given: AB ∥ CD

$$\frac{x+9}{9} = \frac{14}{6}$$

$$6(x+9) = 126$$

$$6x+54 = 126$$
$$-54 \quad -54$$

$$\frac{6x}{6} = \frac{72}{6} \qquad \boxed{x=12}$$
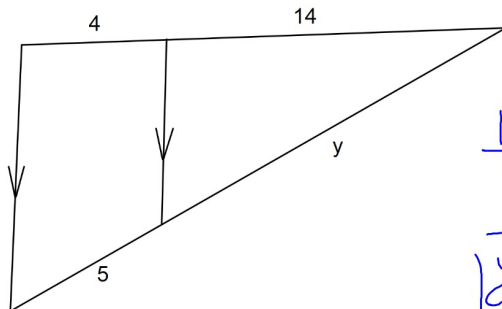
$x+9$ $6+8 = 14$

9   6
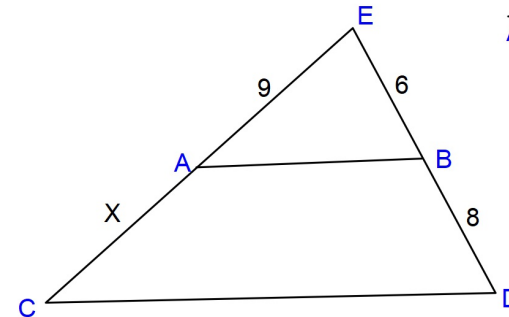
$\overline{AB} \parallel \overline{CD}$

$$\frac{9}{x} = \frac{6}{8}$$
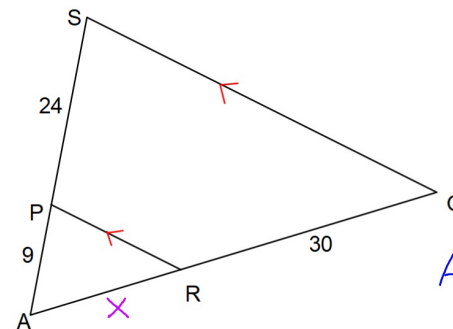
$$\boxed{x=12}$$

Find the value of y.

$$\frac{14}{4} = \frac{y}{5}$$

$$\boxed{y = 17.5}$$

Find the length of $\overline{AG}$

$$\frac{24}{9} = \frac{30}{x}$$

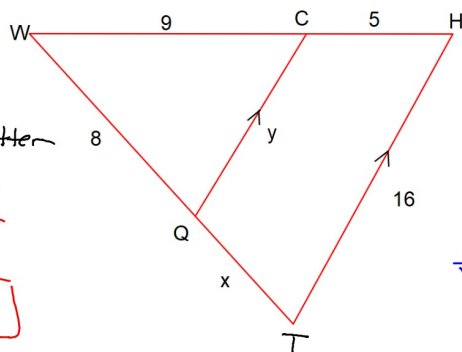$$x = 11.25$$

$$AG = x + 30$$
$$= 11.25 + 30$$

$$\boxed{AG = 41.25}$$
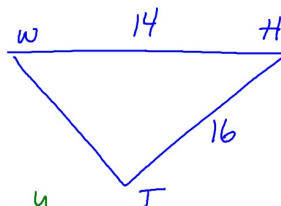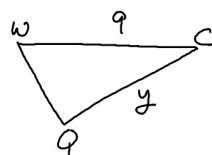
Find the values of x and y.

Find y
use similar △'s

Find x:
use side-splitter theorem

$$\frac{9}{8} = \frac{5}{x}$$

$$\boxed{x = 4.44}$$

W —— 9 —— C —— 5 —— H

8

y

16

Q

x

T

W —— 9 —— C
y
Q

W —— 14 —— H

16

T

$$\frac{9}{14} = \frac{y}{16}$$

$$\boxed{y = 10.29}$$

Hwk #13

Sec 7-5

Page 400

Problems 1, 2, 4-8, 10, 12-14