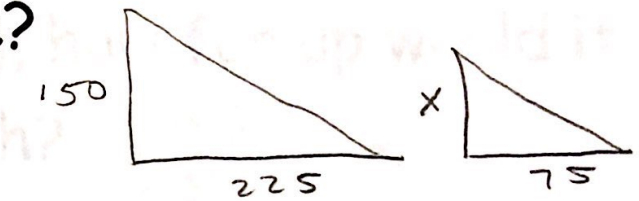
(1)

A 150 foot building casts a shadow of 225 feet. How many feet tall is a nearby building that casts a 75 foot shadow at the same time?

$\frac{x}{150} = \frac{75}{225}$

$225x = 11{,}250$

$\boxed{x = 50}$

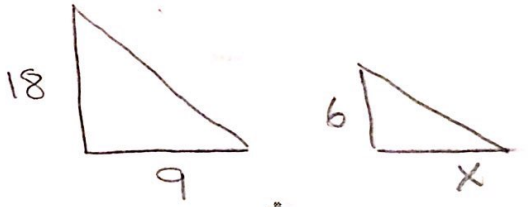


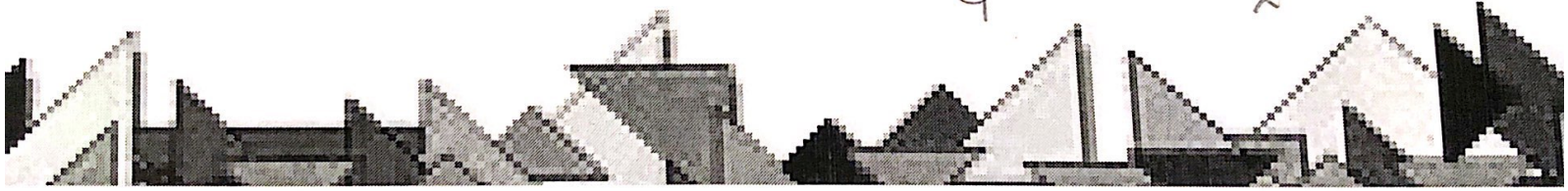
(2) An 18 foot tree casts a shadow of 9 feet. How many feet long will the shadow be of a nearby person standing next to the tree if that person is 6ft tall?

$\frac{18}{6} = \frac{9}{x}$

$18x = 54$

$\boxed{x = 3}$





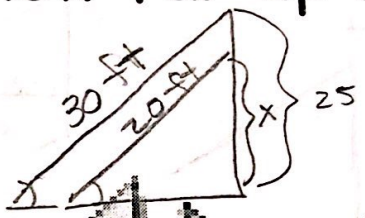
(3)

A ladder that is 30 feet long leans 25 feet up against the side of a building. If we use a 20 foot ladder leaning at the same angle up the side of the building, how far up would it reach?

$\frac{x}{20} = \frac{25}{30}$

$30x = 500$

$\boxed{x = 16.7}$



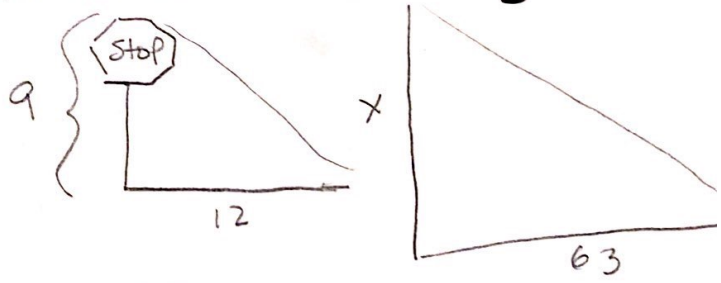
(4)

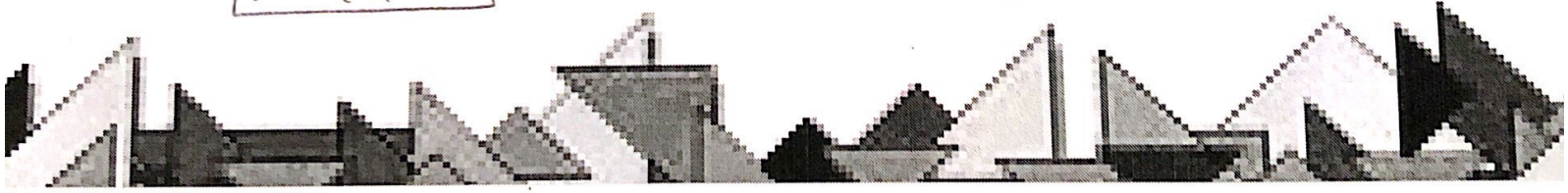
A 9 foot tall STOP sign casts a shadow of 12 feet. A building near the sign casts a 63 foot shadow. How tall is the building?

$\frac{x}{9} = \frac{63}{12}$

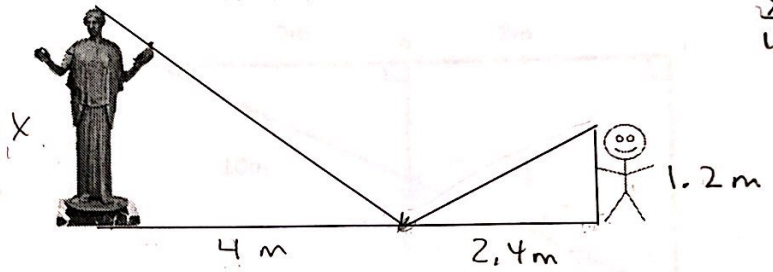
$12x = 567$

$\boxed{x = 47.25}$





(5) A statue, honoring Monica Paredes, can be found on the campus of SUNY Oswego. The statue is 4 m from the edge of the walkway and a person is standing 2.4m from the edge creating the similar triangles below. If the person is 1.2 m tall, how tall is the statue?



$\frac{x}{1.2} = \frac{4}{2.4}$

$2.4x = 4.8$

$\boxed{x = 2}$

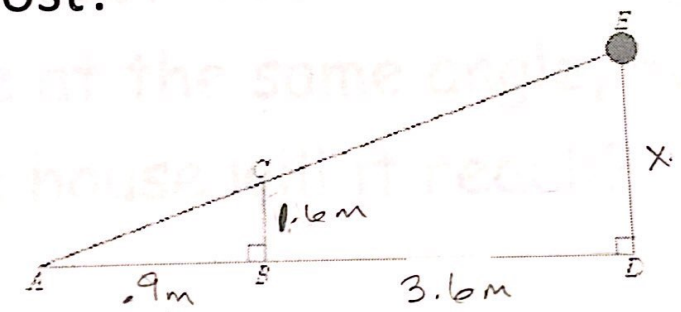
(6) A girl 1.6m tall, stands 3.6m from a lamp post at night. Her shadow from the light is 0.9m long. How tall is the lamp post?

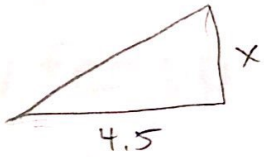
$.9 + 3.6 = 4.5$

$\frac{1.6}{x} = \frac{.9}{4.5}$

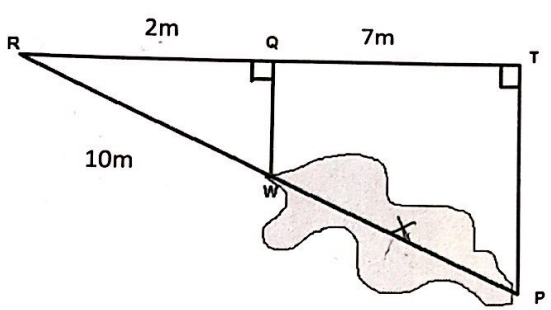
$7.2 = .9x$

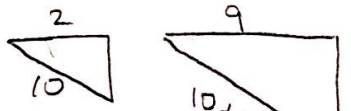
$\boxed{8 = x}$





(7) To determine the length of a pond, data is collected and recorded on the diagram below. What is the length of the pond?





$\frac{2}{9} = \frac{10}{10+X}$

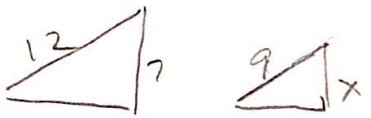
$90 = 2(10+X)$

$90 = 20 + 2X$

$70 = 2X$

$X = 35m$

(8)



$\frac{7}{x} = \frac{12}{9}$ $63 = 12x$ $x = 5.25$ ft

A 12 foot ladder is leaning up against a house. The ladder reaches 7 feet up the side of the house. If a 9 foot ladder is leaning against another house at the same angle, how far up the house will it reach?