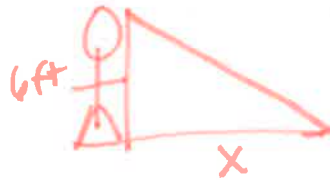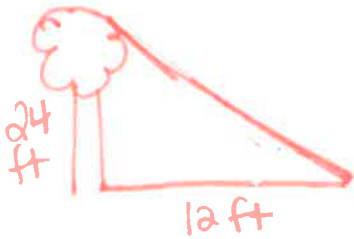# APPLICATION OF SIMILAR TRIANGLES NOTES

1. A tree 24 feet tall casts a shadow 12 feet long. Brad is 6 feet tall. How long is Brad's shadow?
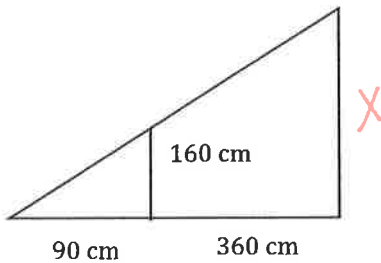

$$\frac{24}{6} = \frac{12}{x}$$
$$24x = 72$$
$$x = 3$$

$$\boxed{3 \text{ ft shadow}}$$

2. A girl 160 cm tall stands 360 cm from a lamp post at night. Her shadow from the light is 90 cm long. How high is the lamp post?
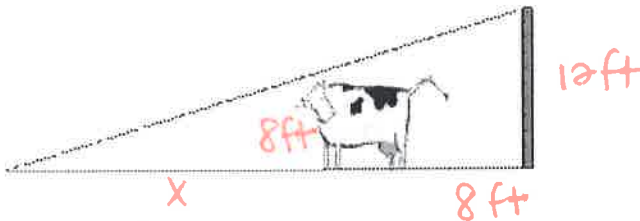

160 cm
90 cm   360 cm

$$\frac{160}{x} = \frac{90}{450}$$
$$90x = 72000$$
$$x = 800$$

$$\boxed{800 \text{ cm tall}}$$

3. The triangles formed by Bossie the Cow and the ground and the Pole and the ground are similar. The height of the pole is 12 feet, how tall is Bossie? The distance from the pole to Bossie is 8 feet. The height of the pole is 12 feet. If Bossie is 8 feet tall, what is the length of her shadow?

12 ft
8 ft
X   8 ft

$$\boxed{16 \text{ ft shadow}}$$

$$\frac{8}{12} = \frac{x}{x+8}$$
$$8x + 64 = 12x$$
$$64 = 4x$$
$$x = 16$$