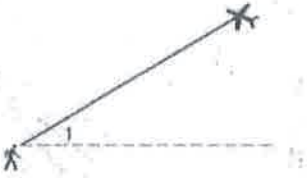


Classify each angle as an angle of elevation or an angle of depression.

Elevation

1. $\angle 1$



Depression

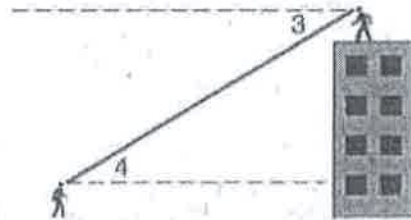
2. $\angle 2$



Use the figure below for problems #3 – 4. Classify each angle as an angle of elevation or depression.

3. $\angle 3$ Depression

4. $\angle 4$ Elevation



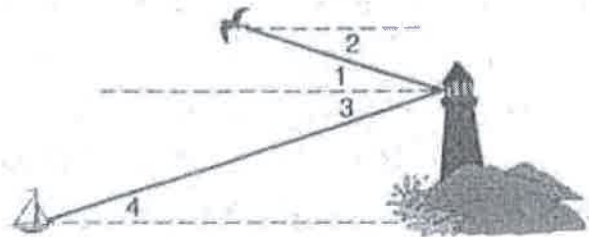
Use the figure below for problems #5 – 8. Classify each angle as an angle of elevation or depression.

5. $\angle 1$ Elevation

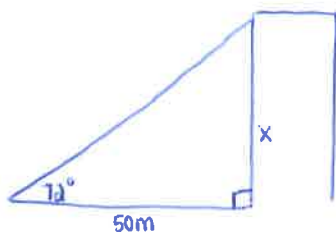
6. $\angle 2$ Depression

7. $\angle 3$ Depression

8. $\angle 4$ Elevation



9. A surveyor 50 meters from the base of a cliff measures the angle of elevation to the top of the cliff as 72° . What is the height of the cliff? Round to the nearest meter.



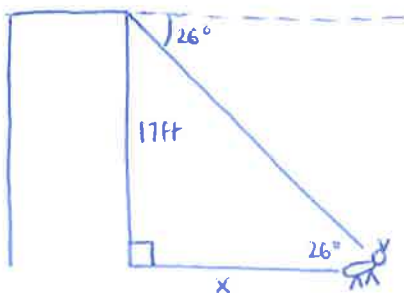
$$\tan 72 = \frac{x}{50}$$

$$x = 50 \tan 72$$

$$x \approx 153.9$$

The cliff is about
154 meters tall

10. Maria is looking out a 17 foot high window and sees two deer. The angle of depression to the deer is 26° . What is the horizontal distance from Maria to the deer? Round to the nearest foot.



$$\tan 26 = \frac{17}{x}$$

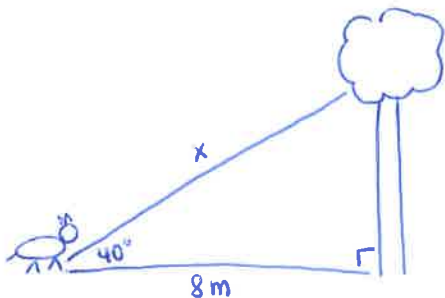
$$17 = x \tan 26$$

$$x = \frac{17}{\tan 26}$$

$$x \approx 34.9$$

Maria is about
35 ft away
from the deer

11. A dog, who is 8 meters from the base of a tree, spots a squirrel in the tree at an angle of elevation of 40° . What is the direct-line distance between the dog and the squirrel? Round to the nearest tenth.



$$\frac{\cos 40}{1} = \frac{8}{x}$$

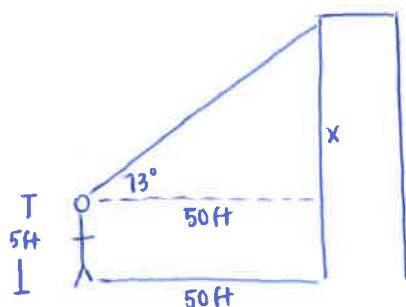
$$8 = x \cos 40$$

$$x = \frac{8}{\cos 40}$$

$$x \approx 10.4$$

The dog and squirrel are about 10.4 m apart

12. Tammi Jo, whose eyes are five feet off the ground, is standing 50 feet away from the base of a building, and she looks up at a 73° angle of elevation to a point on the edge of the building's roof. To the nearest tenth of a foot, how tall is the building?



$$\frac{\tan 73}{1} = \frac{x}{50}$$

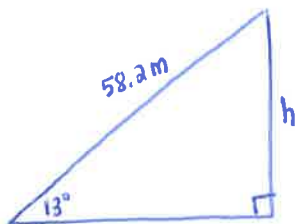
$$x = 50 \cdot \tan 73$$

$$x = 163.5$$

$$\text{Height} = 163.5 + 5 = 168.5$$

The building is about 168.5 ft tall

13. The angle of elevation from the base of the waterslide to the top of the slide is about 13° . The length of the slide is about 58.2 meters. Estimate the height h of the slide.



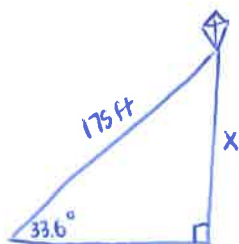
$$\frac{\sin 13}{1} = \frac{h}{58.2}$$

$$h = 58.2 \sin 13$$

$$h \approx 13.1$$

The slide is about 13.1 m high

14. Pat is out flying a kite on a nice spring day. He lets all 175 feet of string out on the kite and estimates the angle of elevation of the kite to be 33.6° . How high off the ground is the kite?



$$\frac{\sin 33.6}{1} = \frac{x}{175}$$

$$x = 175 \sin 33.6$$

$$x \approx 96.8$$

The kite is about 96.8 ft off the ground

Answers: 1) Elevation 2) Depression 3) Depression 4) Elevation 5) Elevation 6) Depression

7) Depression 8) Elevation 9) 154 m 10) 35 ft 11) 10.4 m 12) 168.5 ft 13) 13.1 m 14) 96.8 ft