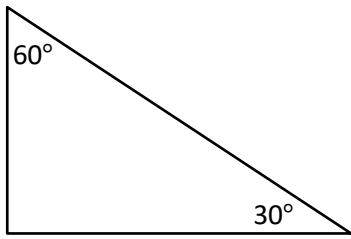1. Label the special right triangle below. Then, find the trig ratios asked for below. Your answers should be exact.

Complementary Angle:

a. sin(30) =   cos(30) =   tan(30) =

b. sin(60) =   cos(60) =   tan(60) =

2. What patterns do you notice in the trigonometric ratios above?

3. Why does the sin θ = cos (90 – θ)?

3. Solve the following.

    a) sin 42° = cos _____°   b) cos 12° = sin _____°   c) sin 45° = cos _____°

    d) cos 0° = sin _____°   e) cos 65° = sin _____°   f) sin 78.5° = cos _____°

4. Solve for the unknown.

    a) sin (x – 5°) = cos (35°)   b) sin (2x – 17°) = cos (x – 4°)   c) sin (x)= cos (x)

    d) sin $(\frac{3}{4}x)$ = cos $(\frac{1}{4}x)$ e) sin (5x – 22°) = cos (x – 10°)   f) sin $(\frac{3}{4}x - 3)$= cos (66°)

5. Choose the correct number for each description.

Angle of Elevation:

Angle of Depression:
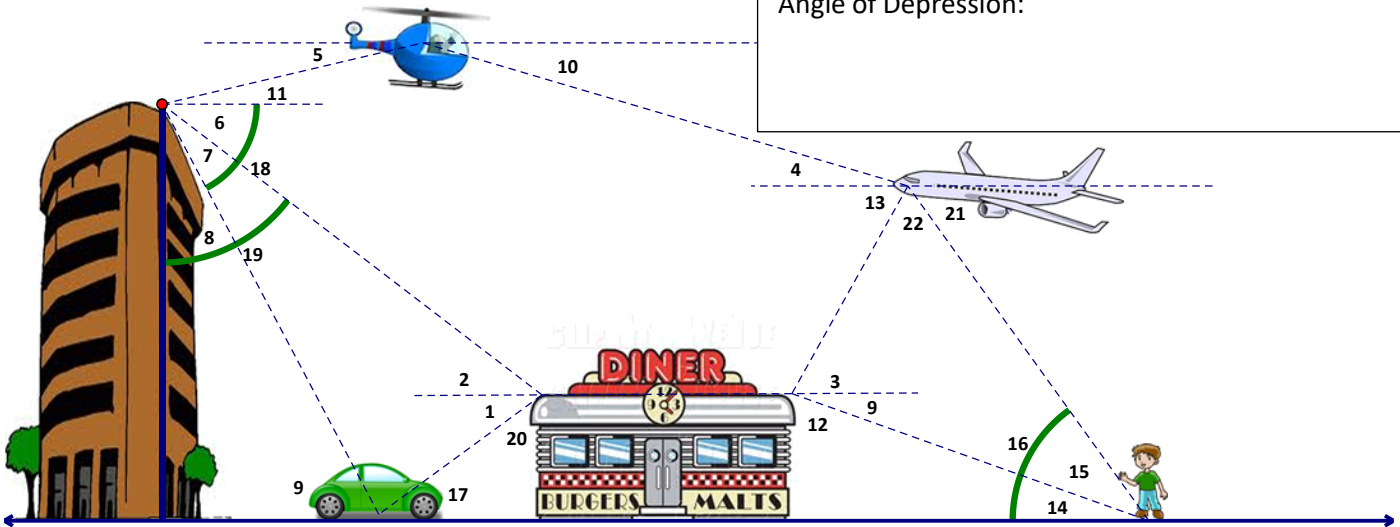
a) the angle of elevation from the **CAR** to the top of the **DINER** is _____.

b) the angle of depression from the top of the **TALL BUILDING** to the **DINER** is _____.

c) the angle of elevation from the **PLANE** to the **HELICOPTER** is _____.

d) the angle of depression from the top of the **DINER** to the **BOY** is _____.

e) the angle of depression from the **HELICOPTER** to the **PLANE** is _____.

f) the angle of depression from the **PLANE** to the top of the **DINER** is _____.

g) the angle of elevation from the **BOY** to the top of the **DINER** is _____.

h) the angle of depression from the top of the **TALL BUILDING** to the top of the **CAR** is _____.

i) the angle of depression from the **HELICOPTER** to the top of the **TALL BUILDING** is _____.

j) the angle of elevation from the top of the **DINER** to the top of the **TALL BUILDING** is _____.

k) the angle of angle of elevation from the top of the **DINER** to the **PLANE** is _____.

l) the angle of depression from the top of the **DINER** to the **CAR** is _____.

m) the angle of elevation from the **BOY** to the front of the **PLANE** is _____.

n) the angle of elevation from the **CAR** to the top of the **DINER** is _____.

o) the angle of depression from the front of the **PLANE** to the **BOY** is _____.

p) the angle of elevation from the **TALL BUILDING** to the **HELICOPTER** is _____.