Warm-up: Applications (Sinusodial Functions as Mathematical Models)

There is a kiddie Ferris wheel at the Cobb County Fair.
The radius of the wheel is 12 feet and it makes a complete revolution every 40 seconds.
The bottom of the ride sits 3 feet above the ground on a platform.
The height of a passenger on the ride is a function of time.

1) Sketch a graph that shows one period of function and write the Cosine equation of the function.

2) How many seconds have you been on the ferris wheel when you first reach the top of the wheel?

3) After how many seconds will you first be at a height of 12 feet above the ground? Round to the nearest tenth.

4) How high will you be at 52 seconds? Round to the nearest tenth.