3.4 Word Problems

Ex.) The Star of Nanchang is one of the tallest Ferris wheels in the world. If you were to graph your height above ground for the first minute of the ride, you would get a sinusoidal curve that looks like this:

a) When you get on a Ferris wheel you usually climb stairs because the Ferris wheel cannot start on the ground. Can you tell form the graph how high up the loading dock is?

y-int : (0,2) 2 metres off the ground.

b) How tall is the Star of Nanchang Ferris wheel?

from the ground ⇒ max 160 m

c) What is the period of the Ferris wheel? And what does it represent?

period = one rotation around Ferris Wheel
↑ how long
30 min.

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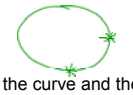
d) State the equation of the midline of the graph.

$\frac{\text{max} + \text{y-int}}{2} = \frac{160+2}{2} = 81$ $y = 81$

e) Determine the amplitude of the graph and what does it represent on the Ferris wheel?

79 m  radius of the Ferris wheel

f) State the domain of the curve and the range of the curve.

min max
$0 \le t \le 60$ $2 \le h \le 160$

g) What are the x and y intercepts of the curve?

y-int: (0,2) height of platform where you get on the Ferris wheel.

x-int: none because h = 0 m would mean you touch the ground...

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