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3M Quad Quiz 3 Name:

A small rocket is launched into the air. Its height, *h*, in metres, after *t* seconds is modelled by $h(t) = -4.9t^2 + 39.2t + 1.75$

a. What was the initial height of the rocket? 1.75m ✓

b. What was the maximum height of the rocket? 80.15m ✓✓✓

c. Find the time the rocket was at its maximum height. 4 sec ✓

d. When does the rocket fall to the ground? 8.04 sec ✓✓✓

e. Find the height of the rocket after 1 second. 36.05 ✓

When is the rocket at that height again? 7sec. ✓

b) c) $h = -4.9(t^2 - 8t + 16 - 16) + 1.75$

$= -4.9[(t-4)^2 - 16] + 1.75$

$= -4.9(t-4)^2 + 80.15$

$\left(\frac{-8}{2}\right)^2$

$(-4)^2$

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d) $0 = -4.9(t-4)^2 + 80.15$

$\frac{-80.15}{-4.9} = (t-4)^2$

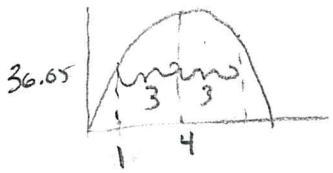
$4 \pm \sqrt{\frac{80.15}{4.9}} = t$

$t = 8.04$ or $t = -0.04$ ✗ inadmiss

e) $h(1) = -4.9(1)^2 + 39.2(1) + 1.75$

$= 36.05$

Symmetry



4 + 3 = 7