Example 3 Linear

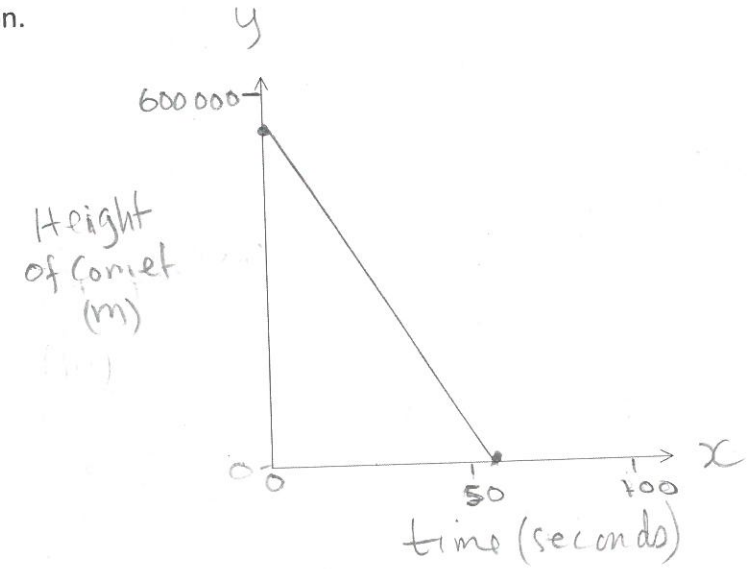
The equation that m... a comet traveling at terminal velocity towards Earth is:

$$y = -10000x + 560000$$

where *y* represents the height of the comet (in metres) and *x* represents the time in seconds after the comet entered the Earth's atmosphere.

a) Sketch the graph of this situation.

Window
x-min 0
x-max 200
y-max 600 000
y min=0



b) How high will the comet be after 5 seconds?

2nd | TRACE | ENTER | x = 5 y = 510 000

After 5 seconds, the comet will be 510 000 m above Earth.

c) When will the comet reach a height of 100 m?

y = 100 | 2nd | TRACE | 5-intersect | ENTER ← 3 times

x = 55.99

After 55.99 seconds, the comet will reach a height of 100 m.

d) After how many seconds will the comet hit the ground?

y = 0 | 2nd | TRACE | 5 | ENTER – 3 times | y = 0 | x = 56

After 56 seconds, the comet will hit the ground