**7th May**

Corbettmaths

The final velocity of a traveling object is given by the formula, $v = u + at$

where v is the final velocity
u is the initial velocity
a is the acceleration
and t is the time.

Given u = 5.4m/s correct to 1 decimal place 5.35 5.45
a = 4.9m/s² correct to 1 decimal place 4.85 4.95
v = 25.32 correct to 2 decimal places 25.315 25.325

$t = \frac{v-u}{a}$

Calculate the upper bound for t.

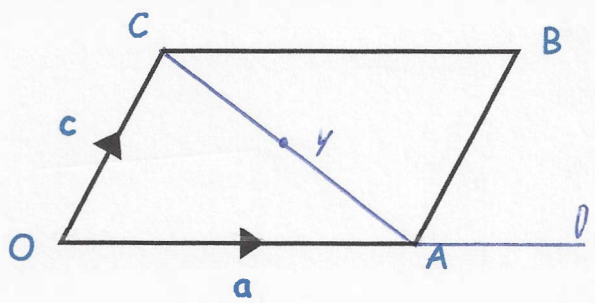
$t = \frac{v_{max} - u_{min}}{a_{min}} = \frac{25.325 - 5.35}{4.85}$

$= 4.118556701$

Calculate the lower bound for t.

$t = \frac{v_{min} - u_{max}}{a_{max}} = \frac{25.315 - 5.45}{4.95}$

$= 4.0131313..$




OABC is a parallelogram

$\overrightarrow{OA} = a \quad \overrightarrow{OC} = c$

Y is the midpoint of AC
OAD is a straight line where
OA:AD = m : 1

Given that

$\overrightarrow{YD} = 6a - \frac{1}{2}c$

$\overrightarrow{CA} = -c + a$

$\overrightarrow{YA} = -\frac{1}{2}c + \frac{1}{2}a$

Find the value of (k) m

$\overrightarrow{YD} = \overrightarrow{YA} + \overrightarrow{AD}$

$6a - \frac{1}{2}a = -\frac{1}{2}c + \frac{1}{2}a + \overrightarrow{AD}$

$\overrightarrow{AD} = 5\frac{1}{2}a$

OA : AD
1 : 5.5 ÷5.5
0.1818... : 1

$m = 0.18$

Prove that $3n(3n + 4) + (n - 6)^2$ is positive for all values of (n)

$9n^2 + 12n + n^2 - 12n + 36$

$10n^2 + 36$

$\geq 0$

Since $10n^2$ is always bigger than or equal to 0,

$10n^2 + 36 > 0$