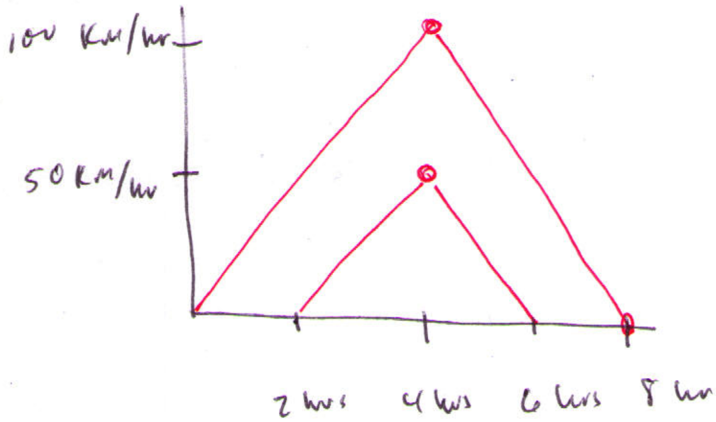
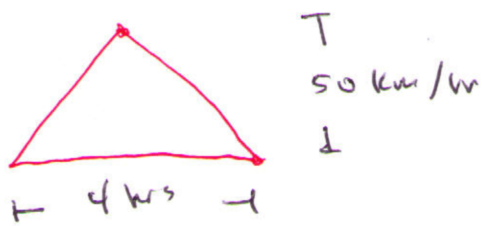
5.



Area $\approx$ Distance Travelled

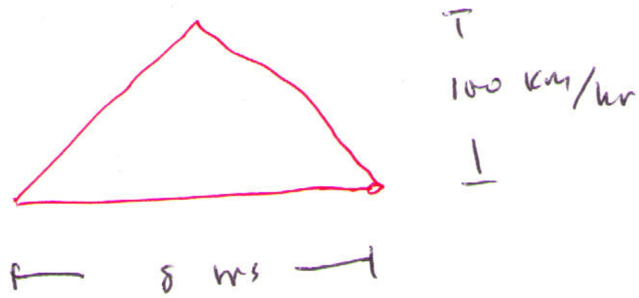
Car B:



Area $= \frac{1}{2}bh$

$= 100$ km

Car A:



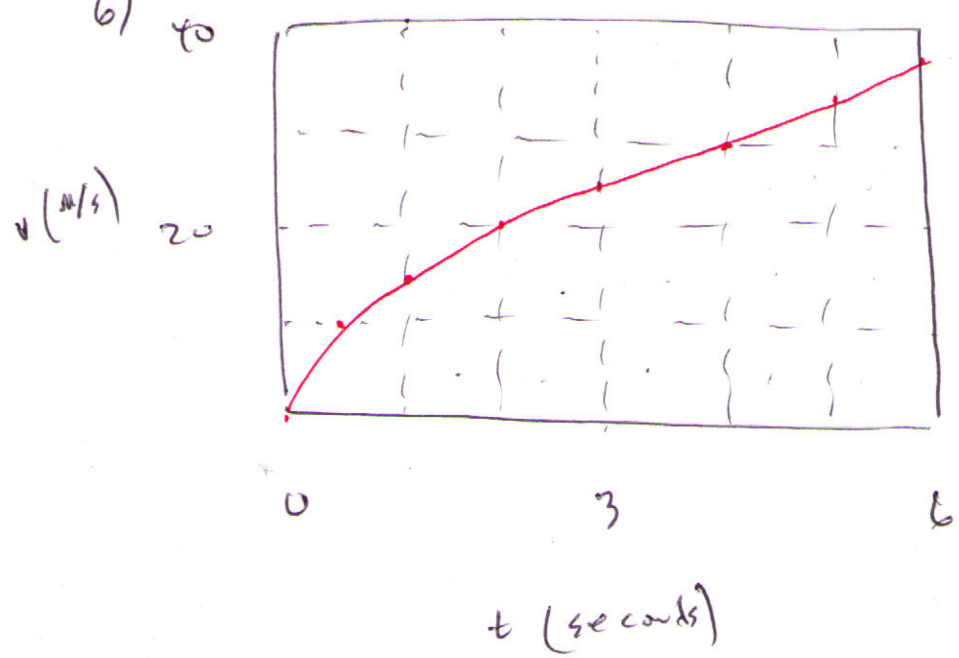
Area $= \frac{1}{2}bh$

$= 400$ km

Car A travelled 400 km over 8 hrs.

Car B travelled 100 km over 4 hrs.

6)



Each block 10 m/s by 1 second.
Area of each block is 10 meters.

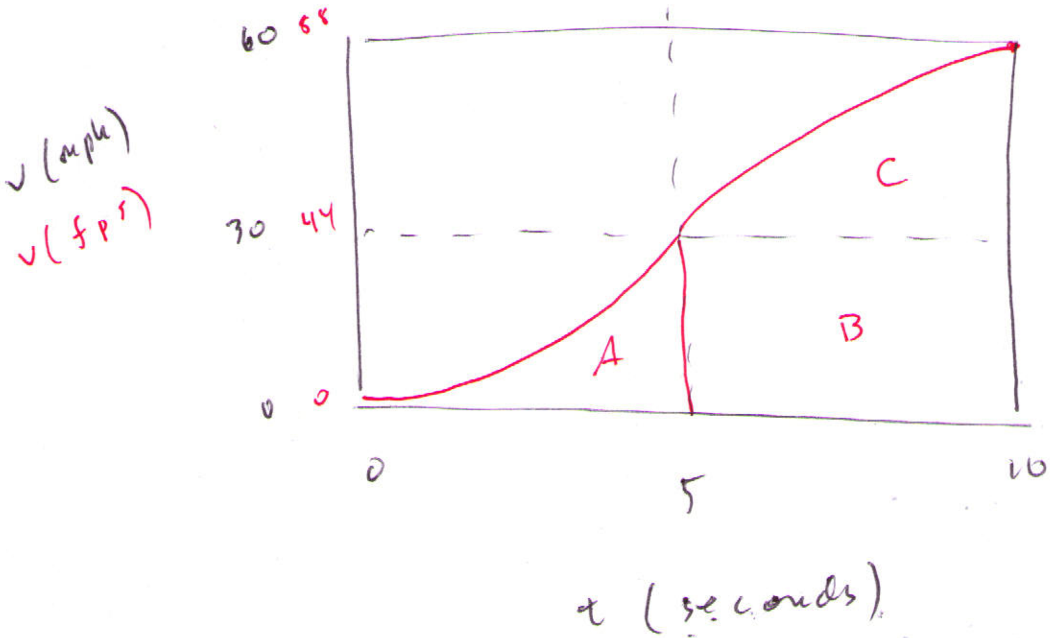
Area under the curve is approximately

11 whole blocks
3.5 pieces of the block that are divided by the curve.

14.5 blocks ≐ 145 meters

Total distance is 145 meters.

7.)



Distance ≡ Area under Curve

Notice that A + C forms a complete rectangle.

So Area of A + Area of C =

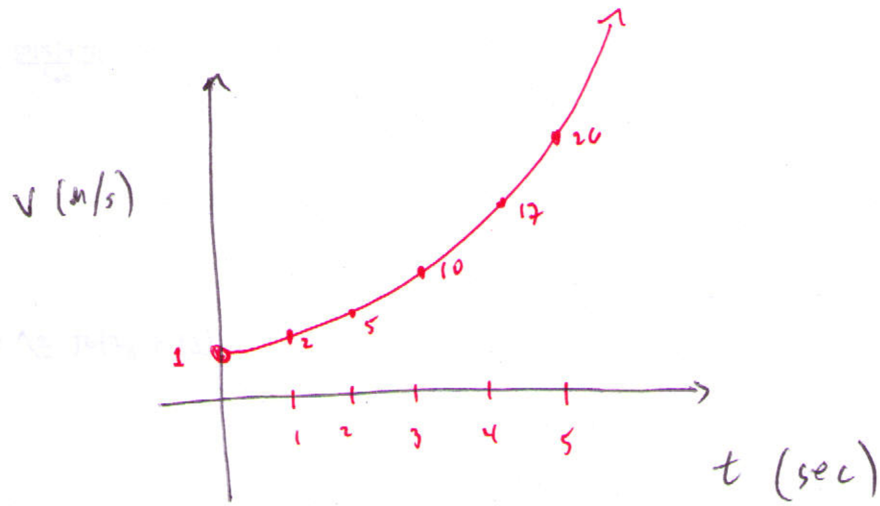
44 fps · 5 sec = 220 feet

Area of B is also 220 feet.

Total Distance is the area of A, B, and C which is 440 feet.

17)

$v = t^2 + 1$



Distance travelled between $t=0$ and $t=5$ $\equiv$ Area under the velocity curve between $t=0$ and $t=5$

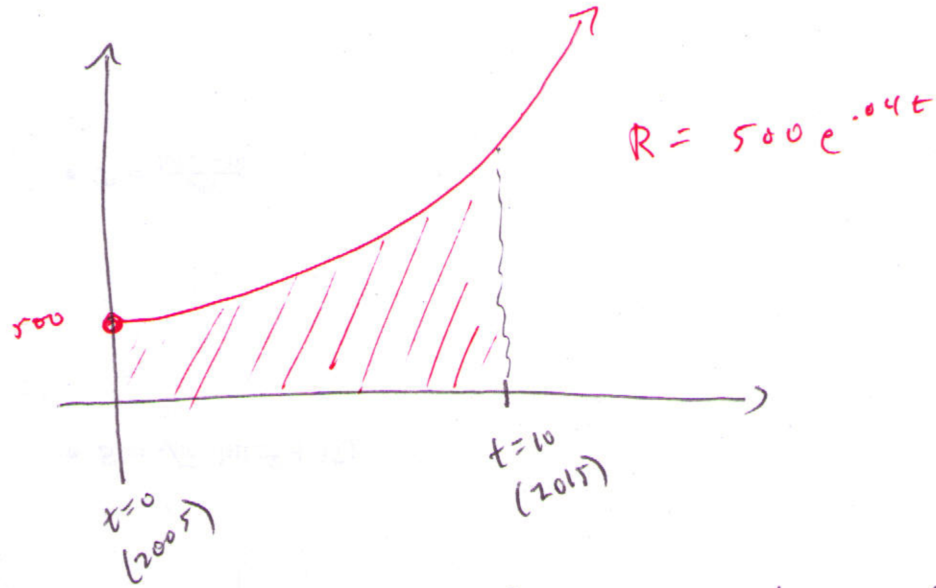
The area can be expressed as

$$\int_0^5 t^2+1 \, dt$$

Graph $v = t^2+1$. Use the integral feature to determine the area under the curve between $t=0$ and $t=5$.

Distance traveled during this time interval will be approximately 46.66 meters.

19.



R is the rate at which your mutual fund is increasing. It is a rate just like a velocity is a rate.

$$\int_0^{10} R(t)\,dt \equiv$$ Change in the value of the mutual fund.

Area $\equiv$ Total Change

Using your calculator,

$$\int_0^{10} 500e^{.04t}\,dt = \$6147$$

You don't know how much \$ the mutual fund is worth - just that in 10 years, it has grown \$6147 in value.