Applications of Linear Equations
(adapted from student text: Foundations and Pre-Calculus Mathematics 10 By Pearson)

1. Each graph below shows distance, $d$ kilometers, as a function of time, $t$ hours. For each graph:
i. Determine the coordinates of the x and y intercepts
ii. Determine the rate of change
a)

b)

2. The graph shows the area, A square meters, that paint covers as a function of its volume, V litres.

i. What is the rate of change and what does it represent?
ii. What area is covered by 3 litres of paint?
iii. How much paint is needed to cover $54 \mathrm{~m}^{2}$ ?
3. The capacity of each of 2 fuel storage tanks is $100 \mathrm{~m}^{3}$. Graph A shows the volume of fuel in one tank as a function of time as the tank is being filled. Graph B shows the volume of fuel in the other tank as a function of time as the tank is being emptied.

Graph A


Graph B

i. Does it take longer to fill the empty tank or to empty the full tank? Explain your answer.
ii. In the time it takes for one tank to be half empty, about how much fuel would be in a tank that was being filled from empty?

