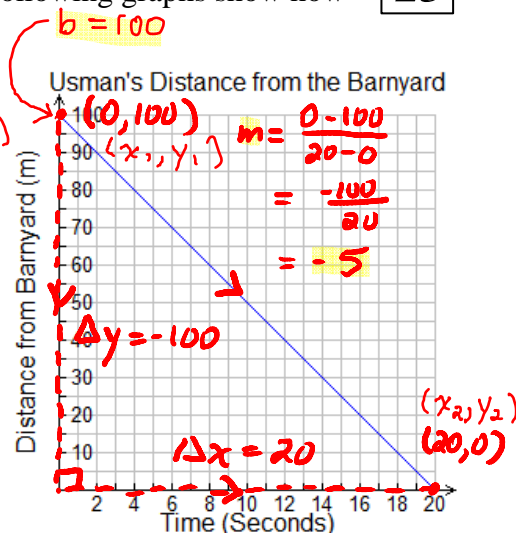
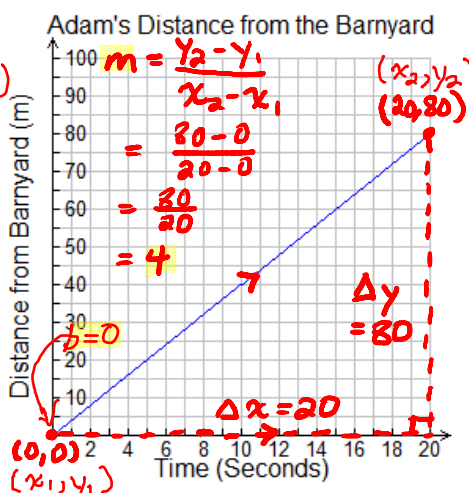
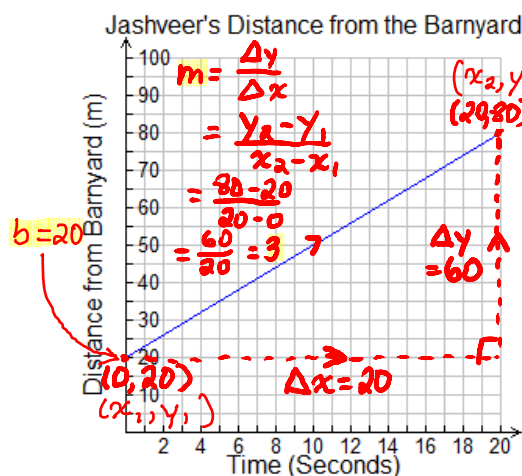


1. Jashveer, Adam and Usman have summer jobs working on a farm. The following graphs show how their **distance** from the barnyard **changed** over a twenty second period.



- (a) The table given below lists the values represented by the variables t , d_J , d_A and d_U .

Variable	What it Represents
t	Time in seconds
d_J	Jashveer's distance from the barnyard
d_A	Adam's distance from the barnyard
d_U	Usman's distance from the barnyard

Write equations relating... (6 /6)

d_J to t : $d_J = 3t + 20$ ✓✓

d_A to t : $d_A = 4t$ ✓✓

d_U to t : $d_U = -5t + 100$ ✓✓

- (b) For each of the relations identify the following: (5 /5)

	Jashveer (d_J to t)	Adam (d_A to t)	Usman (d_U to t)
Slope	3	4	-5 ✓
Constant of Variation	3	4	-5 ✓
Rate of Change	3 m/s	4 m/s	-5 m/s ✓
Vertical Intercept	20	0	100 ✓
Initial Value	20 m	0 m	100 m ✓

- (c) Complete the following table: (6 /6)

Name	Speed	Moving away from or toward Barnyard?
Jashveer	3 m/s ✓	Away ✓
Adam	4 m/s ✓	Away ✓
Usman	5 m/s ✓	Toward ✓

- (d) For each farm worker, write one or two sentences to describe his motion over the twenty second period. (6 /6)

Worker	Description of Motion
Jashveer	He began 20 m from the barnyard and moved away from it at 3 m/s. At 20 s he was 80 m from the barnyard. ✓
Adam	He began at the barnyard and moved away from it at 4 m/s. At 20 s he was 80 m from the barnyard. ✓
Usman	He started 100 m from the barnyard and moved 5 m/s toward it. At 20 s he was at the barnyard. ✓

Note: Slope of distance versus time graph = rate of change of distance over time = speed