REVISION ACTIVITIES ANSWERS

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Activity 2

a) Both graphs show objects that move at constant velocity when the graph is inclined (uniform motion) in some time intervals and stay motionless in others, when the graph is horizontal.

b) Red graph:

Initial time (s)	Final time (s)	Δt (s)	Initial position (m)	Final Position (m)	Δx (m)	Velocity $v = \frac{\Delta x}{\Delta t} m/s$
0	2	2	20	15	-5	-2,5
2	4	2	15	15	0	0
4	8	4	15	5	-10	-2,5
8	12	4	5	20	15	3,75

Blue graph:

Initial time (s)	Final time (s)	Δt (s)	Initial position (m)	Final Position (m)	Δx (m)	Velocity $v = \frac{\Delta x}{\Delta t} m/s$
0	4	4	0	0	0	0
4	8	4	0	20	20	5
8	12	4	20	20	0	0

c) They meet when they both have the same position, when the graphs cross each other, at x = 10 m and time 6 seconds

d) Displacement is final postition minus initial position:

$\Delta x = x_f - x_i$

Δx_{red} (total) =20 -20 = 0 m

Δx_{blue} (total) =20 - 0 = 20 m

Activity 3

Initial time (s)	Final time (s)	Δt (s)	Initial velocity (m/s)	Final velocity (m/s)	Δv (m/s)	Acceleration $a=\frac{\Delta v}{\Delta t} m/s^2$
0	2	2	20	20	0	0
2	4	2	20	-10	-30	-15
4	6	2	-10	-10	0	0
6	8	2	-10	0	10	5
8	10	2	0	0	0	0
10	12	2	0	20	20	10

Activity 11

a) The object moves at constant velocity when the graph is inclined (uniform motion) in some time intervals and stay motionless in others, when the graph is horizontal.
b)

Initial time (s)	Final time (s)	Δt (s)	Initial position (m)	Final Position (m)	Δx (m)	Velocity $v=\frac{\Delta x}{\Delta t} m/s$
0	10	10	0	10	10	1
10	15	5	10	10	0	0
15	20	5	10	20	10	2
20	30	10	20	-10	-30	-3

c)

$$v_{avg}(5-15)=\frac{x_{15}-x_5}{\Delta t}=\frac{10\,m-5\,m}{10\,s}=0{,}5\,m/s$$

d)