A person driving a car traveling at 72 km/hr sees a car pull out in front of him and he slams on his brakes and skids to rest in 4.4 seconds. His reaction time of 1.2 seconds is part of the 4.4 seconds it took to stop.

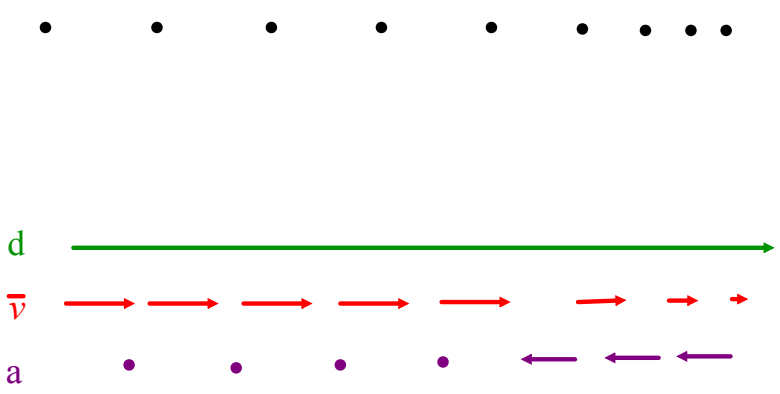
a) Draw a particle diagram of this event.

b) Draw displacement, velocity, and accelertion vectors of this event.

Sep 26-10:06 AM

A person driving car traveling a 72 km/hr sees a a car pull our in front of him and he slams on his brakes and skids to rest in 4.4 seconds. His reaction time of 1.2 seconds is part of the 4.4 seconds it took to stop.

a) Draw a particle diagram of this event.




b) Draw displacement, velocity, and accelertion vectors of this event.

Sep 26-10:06 AM

A person driving car traveling a 72 km/hr sees a a car pull our in front of him and he slams on his brakes and skids to rest in 4.4 seconds. His reaction time of 1.2 seconds is part of the 4.4 seconds it took to stop.

c) What is the cars deceleration during slowing down?

d) How far did the car travel during reaction time?

e) How far did the car travel during slowing down?

f) What total distance did the car travel?

Sep 15-7:36 AM

A person driving car traveling a 72 km/hr sees a a car pull our in front of him and he slams on his brakes and skids to rest in 4.4 seconds. His reaction time of 1.2 seconds is part of the 4.4 seconds it took to stop.

data:

$v_c = 72$ km/hr --- reaction

$v_1 = 72$ km/hr

$v_2 = 0$

$t_t = 4.4$ s

$t_r = 1.2$ s

$t_a = 3.2$ s

c) What is the cars deceleration during slowing down?

d) How far did the car travel during reaction time?

e) How far did the car travel during slowing down?

f) What total distance did the car travel?

Sep 23-10:06 AM

A person driving car traveling a 72 km/hr sees a a car pull our in front of him and he slams on his brakes and skids to rest in 4.4 seconds. His reaction time of 1.2 seconds is part of the 4.4 seconds it took to stop.

$v_1 = 72$ km/hr $(10^3$m/1km$)(1$hr/3600s$) = 20.$ m/s

$v_2 = 0$

$t_t = 4.4$ s

$t_r = 1.2$ s

c) What is the cars deceleration during slowing down?

d) How far did the car travel during reaction time?

e) How far did the car travel during slowing down?

f) What total distance did the car travel?

Sep 23-10:09 AM

A person driving car traveling a 72 km/hr sees a a car pull our in front of him and he slams on his brakes and skids to rest in 4.4 seconds. His reaction time of 1.2 seconds is part of the 4.4 seconds it took to stop.

$v_1 = 72$ km/hr $(10^3$m/1km$)(1$hr/3600s$) = 20.$ m/s

$v_2 = 0$

$t_t = 4.4$ s

$t_r = 1.2$ s

c) What is the cars deceleration during slowing down?

Type Motion?

$v_v$, accel

$\bar{v} = \Delta d/t$

$\bar{v} = v_1 + v_2/2$

$a = \Delta v/\Delta t$

d) How far did the car travel during reaction time?

e) How far did the car travel during slowing down?

f) What total distance did the car travel?

Sep 23-10:17 AM

A person driving car traveling a 72 km/hr sees a a car pull our in front of him and he slams on his brakes and skids to rest in 4.4 seconds. His reaction time of 1.2 seconds is part of the 4.4 seconds it took to stop.

$v_1 = 72$ km/hr $(10^3$m/1km$)(1$hr/3600s$) = 20.$ m/s

$v_2 = 0$

$t_t = 4.4$ s $\qquad t_a = t_t - t_r$

$t_r = 1.2$ s

c) What is the cars deceleration during slowing down?

Type Motion?

$v_v$, accel $\qquad a = \Delta v/\Delta t = v_2 - v_1/t_2 - t_1 = (0 - 20.\text{m/s})/(4.4\text{ s} - 1.2\text{ s}) = -6.3\text{ m/s}^2$

$\bar{v} = \Delta d/t$

$\bar{v} = v_1 + v_2/2$

$a = \Delta v/\Delta t$

d) How far did the car travel during reaction time?

e) How far did the car travel during slowing down?

f) What total distance did the car travel?

Sep 23-10:11 AM

A person driving car traveling a 72 km/hr sees a a car pull our in front of him and he slams on his brakes and skids to rest in 4.4 seconds. His reaction time of 1.2 seconds is part of the 4.4 seconds it took to stop.

$v_1 = 72$ km/hr $(10^3$m/1km$)(1$hr/3600s$) = 20.$ m/s

$v_2 = 0$

$t_t = 4.4$ s

$t_r = 1.2$ s

c) What is the cars deceleration during slowing down?

$a = \Delta v/\Delta t = v_2 - v_1/t_2 - t_1 = (0 - 20.\text{m/s})/(4.4\text{ s} - 1.2\text{ s}) = -6.3\text{ m/s}^2$

d) How far did the car travel during reaction time?

Type Motion?

e) How far did the car travel during slowing down?

f) What total distance did the car travel?

Sep 23-10:19 AM

A person driving car traveling a 72 km/hr sees a a car pull our in front of him and he slams on his brakes and skids to rest in 4.4 seconds. His reaction time of 1.2 seconds is part of the 4.4 seconds it took to stop.

$v_1 = 72$ km/hr $(10^3$m/1km$)(1$hr/3600s$) = 20.$ m/s

$v_2 = 0$

$t_t = 4.4$ s

$t_r = 1.2$ s

c) What is the cars deceleration during slowing down?

$a = \Delta v/\Delta t = v_2 - v_1/t_2 - t_1 = (0 - 20.\text{m/s})/(4.4\text{ s} - 1.2\text{ s}) = 6.3\text{ m/s}^2$

d) How far did the car travel during reaction time?

Type Motion?

$v_c$

$\therefore v = \Delta d/t$

e) How far did the car travel during slowing down?

f) What total distance did the car travel?

Sep 23-10:21 AM

A person driving car traveling a 72 km/hr sees a a car pull our in front of him and he slams on his brakes and skids to rest in 4.4 seconds. His reaction time of 1.2 seconds is part of the 4.4 seconds it took to stop.

$v_1 = 72$ km/hr $(10^3$m/1km$)(1$hr/3600s$) = 20.$ m/s

$v_2 = 0$

$t_t = 4.4$ s

$t_r = 1.2$ s

c) What is the cars deceleration during slowing down?

$a = \Delta v/\Delta t = v_2 - v_1/t_2 - t_1 = (0 - 20.\text{m/s})/(4.4\text{ s} - 1.2\text{ s}) = 6.3\text{ m/s}^2$

d) How far did the car travel during reaction time?

Type Motion?

$v_c$

$\therefore v = \Delta d/t$

$v = \Delta d/t$

$\Delta d = vt = 20.\text{ m/s}(1.2\text{ s}) = 24\text{ m}$

e) How far did the car travel during slowing down?

f) What total distance did the car travel?

Sep 23-10:22 AM

A person driving car traveling a 72 km/hr sees a a car pull our in front of him and he slams on his brakes and skids to rest in 4.4 seconds. His reaction time of 1.2 seconds is part of the 4.4 seconds it took to stop.

$v_1 = 72$ km/hr $(10^3$m/1km$)(1$hr/3600s$) = 20.$ m/s

$v_2 = 0$

$t_t = 4.4$ s

$t_r = 1.2$ s

c) What is the cars deceleration during slowing down?

$a = \Delta v/\Delta t = v_2 - v_1/t_2 - t_1 = (0 - 20.\text{m/s})/(4.4\text{ s} - 1.2\text{ s}) = 6.3\text{ m/s}^2$

d) How far did the car travel during reaction time?

$v = \Delta d/t$

$\Delta d = vt = 20.\text{ m/s}(1.2\text{ s}) = 24\text{ m}$

e) How far did the car travel during slowing down?

Type Motion?

f) What total distance did the car travel?

Sep 23-10:24 AM

A person driving car traveling a 72 km/hr sees a a car pull our in front of him and he slams on his brakes and skids to rest in 4.4 seconds. His reaction time of 1.2 seconds is part of the 4.4 seconds it took to stop.

$v_1 = 72$ km/hr $(10^3$m/1km$)(1$hr/3600s$) = 20.$ m/s

$v_2 = 0$

$t_t = 4.4$ s

$t_r = 1.2$ s

c) What is the cars deceleration during slowing down?

$a = \Delta v/\Delta t = v_2 - v_1/t_2 - t_1 = (0 - 20.\text{m/s})/(4.4\text{ s} - 1.2\text{ s}) = 6.3\text{ m/s}^2$

d) How far did the car travel during reaction time?

$v = \Delta d/t$

$\Delta d = vt = 20.\text{ m/s}(1.2\text{ s}) = 24\text{ m}$

e) How far did the car travel during slowing down? $t_a = t_t - t_r$

Type Motion?

$v_v$, accel

$v = \Delta d/t$ $\quad \bar{v} = v_1 + v_2/2 = (0 + 20.\text{ m/s})/2 = 10\text{ m/s}$

$\Delta d = \bar{v}t = 10\text{ m/s}(3.2\text{ s}) = 32\text{ m}$

$\bar{v} = \Delta d/t$

$\bar{v} = v_1 + v_2/2$

$a = \Delta v/\Delta t$

f) What total distance did the car travel?

Sep 23-10:25 AM

A person driving car traveling a 72 km/hr sees a a car pull our in front of him and he slams on his brakes and skids to rest in 4.4 seconds. His reaction time of 1.2 seconds is part of the 4.4 seconds it took to stop.

$v_1 = 72$ km/hr $(10^3$m/1km$)(1$hr/3600s$) = 20.$ m/s

$v_2 = 0$

$t_t = 4.4$ s

$t_r = 1.2$ s

c) What is the cars deceleration during slowing down?

$a = \Delta v/\Delta t = v_2 - v_1/t_2 - t_1 = (0 - 20.\text{m/s})/(4.4\text{ s} - 1.2\text{ s}) = 6.3\text{ m/s}^2$

d) How far did the car travel during reaction time?

$v = \Delta d/t$

$\Delta d = vt = 20.\text{ m/s}(1.2\text{ s}) = 24\text{ m}$

e) How far did the car travel during slowing down?

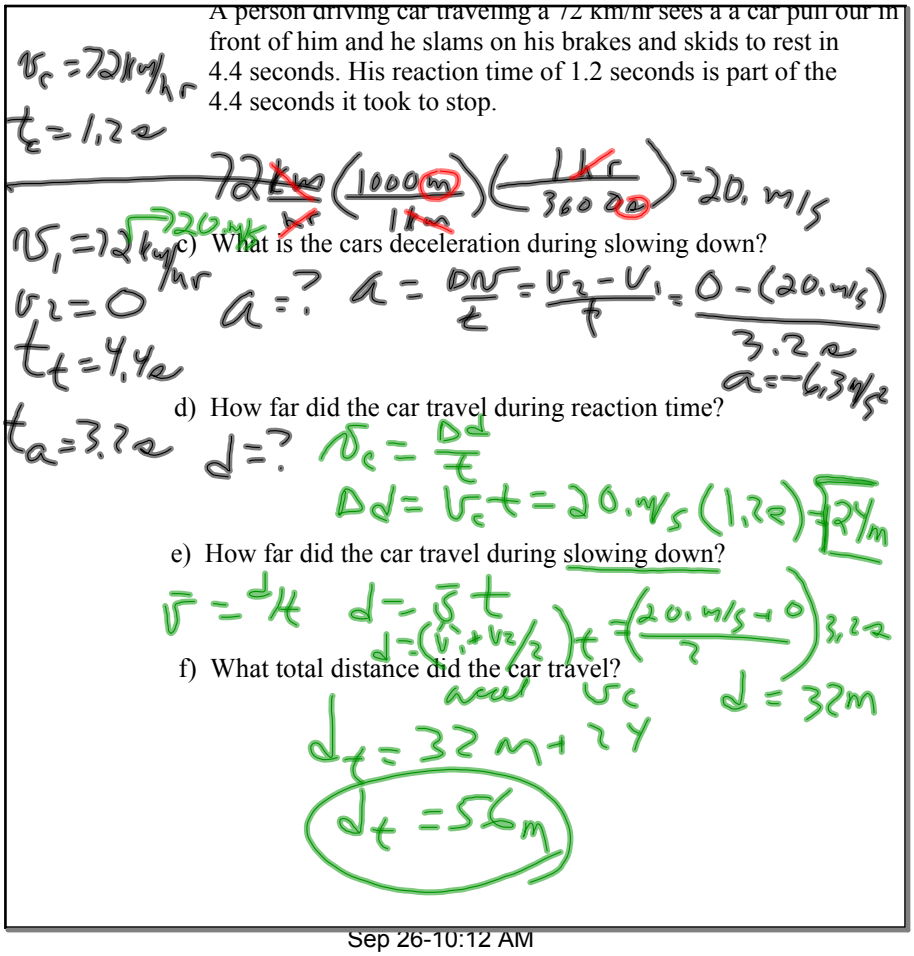
$\bar{v} = \Delta d/t \qquad \bar{v} = v_1 + v_2/2 = (0 + 20.\text{ m/s})/2 = 10\text{ m/s}$

$\Delta d = \bar{v}t = 10\text{ m/s}(3.2\text{ s}) = 32\text{ m}$

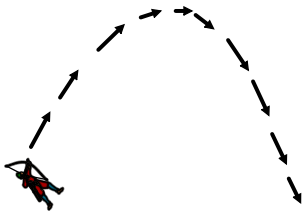
f) What total distance did the car travel?

$d_t = d_r + d_a = 24\text{ m} + 32\text{ m} = 56\text{ m}$

Sep 23-10:29 AM




Sep 26-10:12 AM



A silly little archer shoots an arrow into the air. The arrow leaves his bow at 45 m/s.

a) How long does the arrow take to get to the top of its path?

b) How high does the arrow go?

c) What speed does the arrow hit the ground at?

d) How long was the arrow in the air?

displacement????

Sep 15-7:37 AM

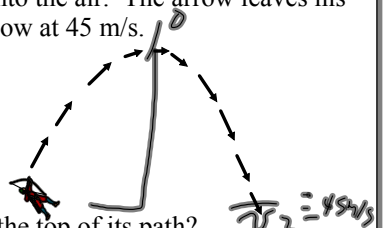
$v_1 = 45\ m/s$

$v_2 = -45\ m/s$

$v_{Top} = 0$

$a = -9.8\ m/s^2$

A silly little archer shoots an arrow into the air. The arrow leaves his bow at 45 m/s.




a) How long does the arrow take to get to the top of its path?

$t = ?$ $a = \frac{\Delta v}{t} = \frac{v_2 - v_1}{t}$ $t = \frac{v_2 - v_1}{a} = \frac{0 - (45\ m/s)}{-9.8\ m/s^2}$

$t = 4.6\ s$

b) How high does the arrow go?

$d = \bar{v} = d/t$ $d = \bar{v}t = \left(\frac{v_1 + v_2}{2}\right)t = \left(\frac{45\ m/s - 0}{2}\right)4.6\ s$

$d = 100\ m$

c) What speed does the arrow hit the ground at?

$-45\ m/s$

d) How long was the arrow in the air?

$4.60 \times 2$

$9.2\ s$

displacement????

$t = \frac{v_2 - v_1}{a} = \frac{-45\ m/s - (45\ m/s)}{-9.8\ m/s^2}$

$t = 9.2\ s$

Sep 26-10:25 AM