KEY

First Name:_____ Last Name:_____

L03 – FQ – Uniform Motion in 1-Dimension

Use the following information to answer Q1-Q2:

A squirrel is 15m [West] of a tree when it sees a friendly park attendant with bread crumbs. The park attendant is 40m [East] of the tree. The squirrel runs at 3.6 m/s [East] towards the park attendance.

Q1: Which best describes the squirrel's final position, relative to the tree?

a. 15m [East]
b. 25m [East]
c. 40m [East]
d. 55m [East]

$\vec{d}_i = 15\text{m}[W]$
$\vec{d}_f = 40\text{m}[E]$
$\Delta\vec{d} = 55\text{m}[E]$
$\vec{v} = 3.6\text{m/s}[E]$

Q2: Which best describes he squirrel's displacement?

a. 15m [East]
b. 25m [East]
c. 40m [East]
d. 55m [East]

$\Delta\vec{d} = \vec{d}_f - \vec{d}_i$
$= (40\text{m}[E]) - (-15\text{m}[E])$
$= 40 + 15$
$= 55\text{m}[E]$

Q3: How long, in seconds, was the squirrel running for?

*(Record your **three digit** answer in the Numerical Response boxes below)*

1	5	.	3

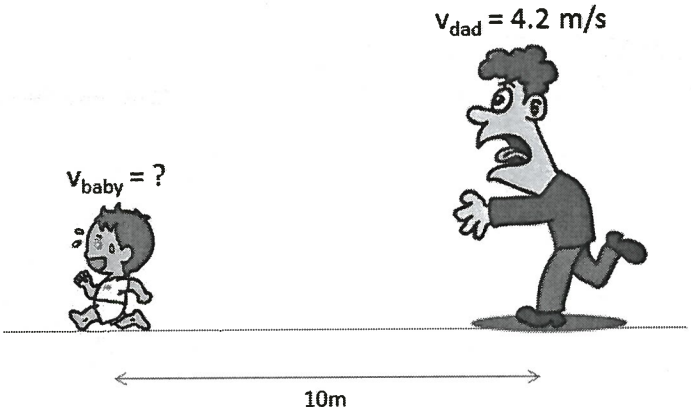
$\vec{v} = \frac{\Delta\vec{d}}{\Delta t} \Rightarrow \Delta t = \frac{\Delta\vec{d}}{\vec{v}} = \frac{55\text{m}[E]}{3.6\text{m/s}[E]} = 15.2\overline{7}\text{ s}$

$\approx 15.3\text{s}$

KEY

Use the following information to answer Q4:

A young baby is playing in a playground 10m from his father, when he decides to start running for the road. The father immediately chases after and catches him 3.5 seconds later.



Q4: How fast, in meters per second, was the baby running?

*(Record your **three digit** answer in the Numerical Response boxes below)*

1	.	3	4

Dad

$v = 4.2\ m/s$

$t = 3.5\ s$

$d = ?$

$v = \frac{d}{t} \Rightarrow d = vt$

$= (4.2)(3.5)$

$= 14.7\ m$

Baby

$v = ?$

$t = 3.5\ s$

$d = 14.7 - 10 = 4.7\ m$

$v = \frac{d}{t}$

$v = \frac{4.7\ m}{3.5\ s}$

$v = 1.34\ m/s$

MARKING:

Beginning	0.0 – 1.5
Progressing	2.0 – 2.5
Competent	3.0 – 3.5
Exemplary	4.0