

Q1.(2019)

a)

equal to

b)

J ----- increasing speed

K----- constant speed

L ----- decreasing speed

c)

25 (m)

d)

$$\text{av speed} = \frac{100}{12.5}$$

$$\text{av speed} = 8(.0) \text{ (m/s)}$$

OR

$$\text{av speed} = \frac{100}{12.6}$$

$$\text{av speed} = 7.93... \text{ (m/s)}$$

e)

3.0

Q2.(2019)

a)

B

b)

horizontal line drawn from
(40, 20) to (300, 20)

straight line drawn from
the point where line B finishes
to 0 m/s

finishing on the x-axis at 360 s

c)

$$\text{acceleration} = \frac{(\text{change in})\text{velocity}}{\text{time (taken)}}$$

d)

$$1.15 = \frac{\Delta v}{22}$$

$$\Delta v = 1.15 \times 22$$

$$\Delta v = 25.3 \text{ (m/s)}$$

Q3.(2024)

a)

0 (N)

the child isn't accelerating
(vertically)

or

upwards forces are equal to the
downwards forces

b)

work done = force $\times$ distance

or

$$W = F \times s$$

c)

$$35 = F \times 2.8$$

$$F = \frac{35}{2.8}$$

$$F = 12.5 \text{ (N)}$$

d)

the resistive force has
decreased

so the resultant force increases

e)

moment = force $\times$ distance

or

$$M = F \times d$$

f)

$$7.5 \text{ cm} = 0.075 \text{ m}$$

$$M = 2.0 \times 0.075$$

$$M = 0.15 \text{ (Nm)}$$

g)

gear B rotates in the opposite
direction (to gear A)

or

gear B rotates clockwise

or

gear B rotates faster than gear
A

(because) gear A exerts a force
on gear B

or

(because) gear A causes a
moment about the pivot of gear
B