A-Level Edexcel

PHYSICS

UNIT 1(IAL)

2020 — 2025

1 – (WPH11/1(IAL)_Summer_2020_Q1) – *Mechanics*

Which of the following units is only used with vector quantities?

☒ **A** J

☒ **B** m

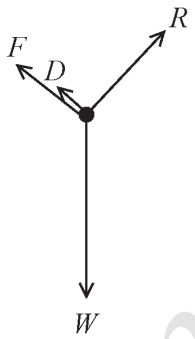
☒ **C** N

☒ **D** W

2 – (WPH11/1(IAL)_Summer_2020_Q2) – *Mechanics*

A box was placed at the top of a ramp and released.

The free-body force diagram for the box as it moved down the ramp at a constant velocity is shown.



D = air resistance

F = frictional force

R = normal contact force

W = weight of the box

Which two forces acting on the box have, according to Newton's third law, corresponding forces acting on the ramp?

☒ **A** F and D

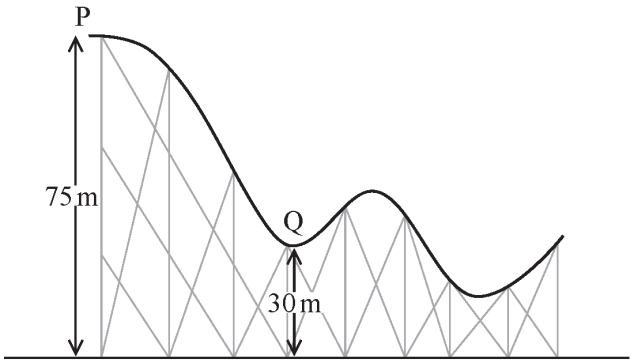
☒ **B** F and R

☒ **C** W and D

☒ **D** W and R

3 - (WPH11/1(IAL)_Summer_2020_Q3) - *Mechanics*

The diagram shows a roller coaster. A roller coaster car stops momentarily at P before descending towards Q.



Which of the following expressions could be used to determine the velocity of the roller coaster car at Q?

☒ **A** $\sqrt{75g} - \sqrt{30g}$

☒ **B** $\sqrt{150g} - \sqrt{60g}$

☒ **C** $\sqrt{45g}$

☒ **D** $\sqrt{90g}$

4 - (WPH11/1(IAL)_Summer_2020_Q4) - *Mechanics*

A car travels north with a velocity of $+50\,\text{m s}^{-1}$. While still travelling north, the car slows to a velocity of $+20\,\text{m s}^{-1}$.

Which of the following is the change of velocity of the car?

☒ **A** $+30\,\text{m s}^{-1}$

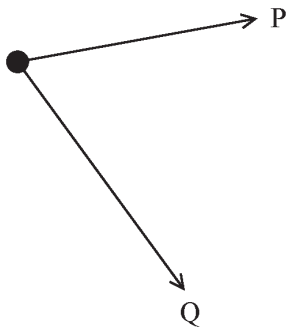
☒ **B** $-30\,\text{m s}^{-1}$

☒ **C** $+70\,\text{m s}^{-1}$

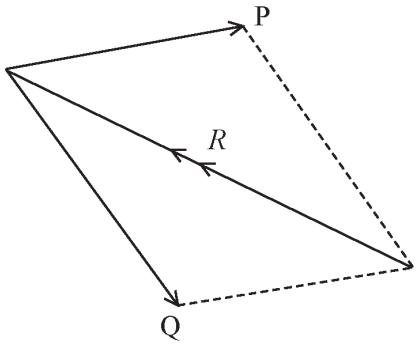
☒ **D** $-70\,\text{m s}^{-1}$

5 – (WPH11/1(IAL)_Summer_2020_Q5) – *Mechanics*

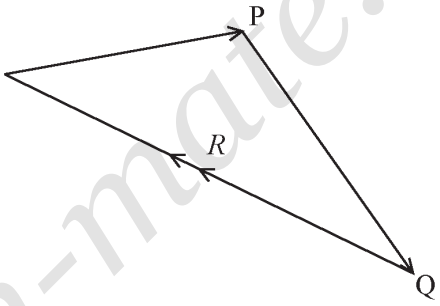
Two forces P and Q act on an object as shown.



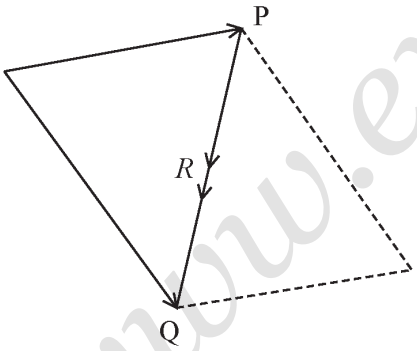
Which of the following is a correctly drawn, scaled, vector diagram for the resultant *R* of forces P and Q?



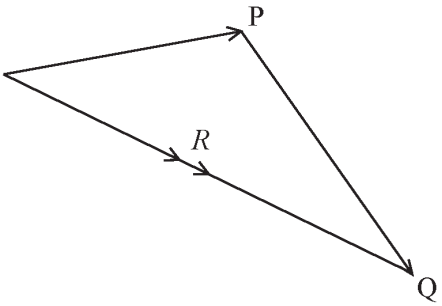
A



B



C



D

☒ **A**

☒ **B**

☒ **C**

☒ **D**

6 - (WPH11/1(IAL)_Summer_2020_Q6) - *Mechanics*

A lamp with an efficiency of 0.68 usefully transfers 120 J of energy.

Which of the following can be used to determine E, the energy supplied to the lamp?

☒ **A** $E = 0.68 \times 120 \times 100$

☒ **B** $E = 0.68 \times 120$

☒ **C** $E = \frac{120}{0.68} \times 100$

☒ **D** $E = \frac{120}{0.68}$

7 - (WPH11/1(IAL)_Summer_2020_Q7) - *Mechanics*

A student used a falling sphere to determine the acceleration of free-fall g. The sphere was released from rest.

Which two quantities would require the fewest measurements to be taken in order to determine g?

☒ **A** displacement and initial velocity

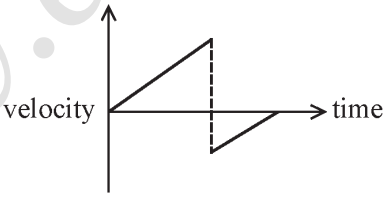
☒ **B** displacement and time

☒ **C** final velocity and displacement

☒ **D** final velocity and time

8 - (WPH11/1(IAL)_Summer_2020_Q9) - *Mechanics*

The velocity-time graph for the motion of a ball is shown.



Which of the following correctly describes the motion of the ball?

☒ **A** The ball is dropped and rebounds to its original position.

☒ **B** The ball is dropped and rebounds to a lower position.

☒ **C** The ball is thrown upwards and is caught at its original position.

☒ **D** The ball is thrown upwards and is caught at a higher position.

ANSWERS

1 – (WPH11/1(IAL)_Summer_2020_Q1) – *Mechanics*

C

2 – (WPH11/1(IAL)_Summer_2020_Q2) – *Mechanics*

B

3 – (WPH11/1(IAL)_Summer_2020_Q3) – *Mechanics*

D

4 – (WPH11/1(IAL)_Summer_2020_Q4) – *Mechanics*

B

5 – (WPH11/1(IAL)_Summer_2020_Q5) – *Mechanics*

D

6 – (WPH11/1(IAL)_Summer_2020_Q6) – *Mechanics*

D

7 – (WPH11/1(IAL)_Summer_2020_Q7) – *Mechanics*

B

8 – (WPH11/1(IAL)_Summer_2020_Q9) – *Mechanics*

B

9 – (WPH11/1(IAL)_Summer_2020_Q10) – *Mechanics*

C