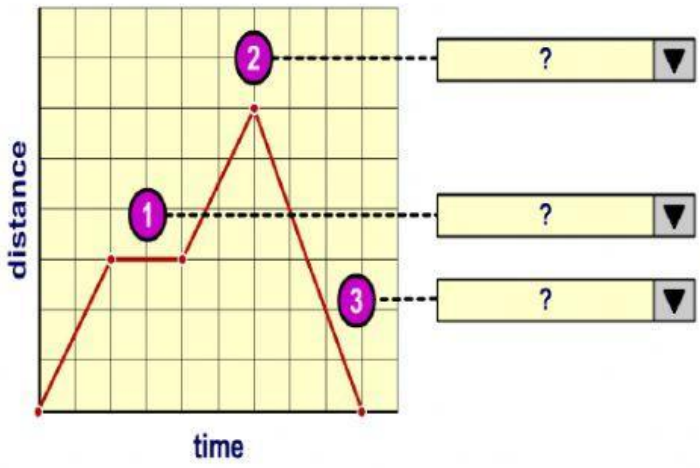
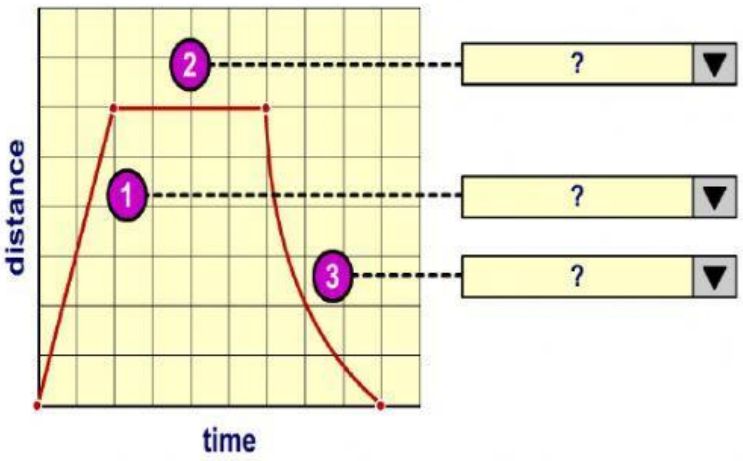
Try to fill in the gaps using the words: Furthest from the start, uniform speed, non-uniform speed, stationary, moving forward, moving backwards, uniform acceleration, uniform deceleration, non-uniform acceleration, non-uniform deceleration.

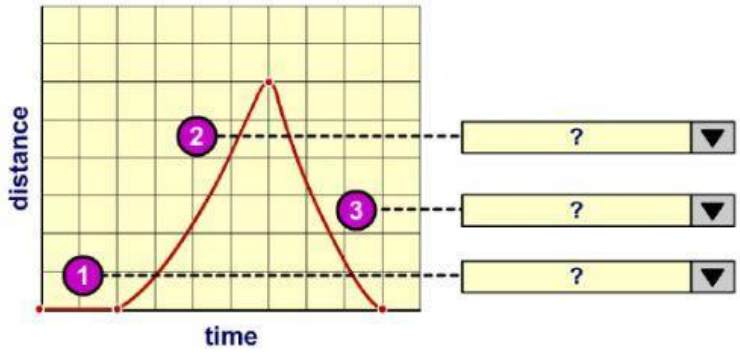
What is happening in these distance–time graphs?



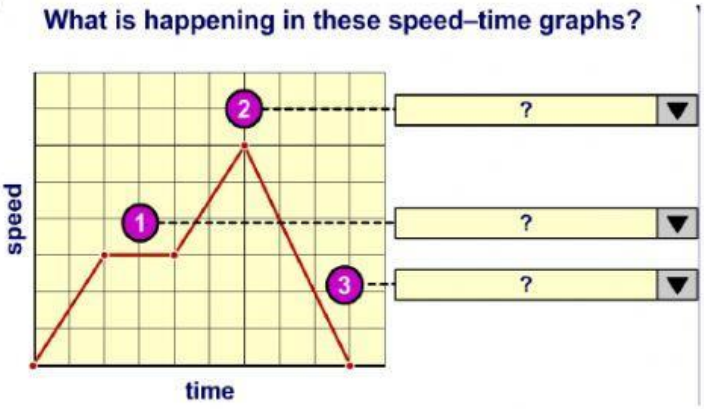
What is happening in these distance–time graphs?



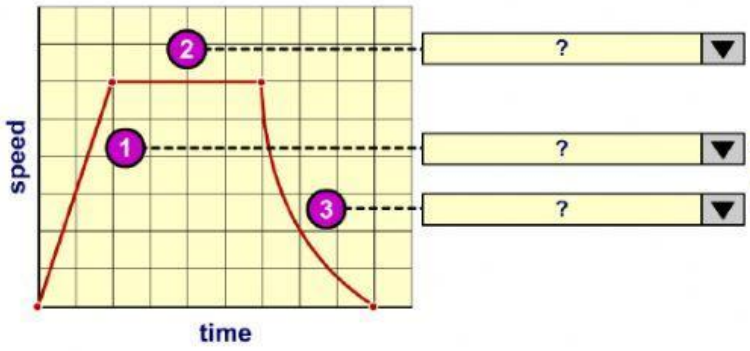
What is happening in these distance–time graphs?



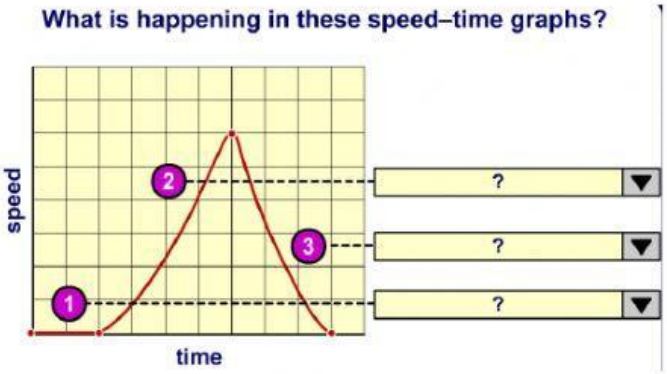
What is happening in these speed–time graphs?



What is happening in these speed–time graphs?



What is happening in these speed–time graphs?



Review learning

Complete the following table.

Remember! Speed = $\frac{\text{distance}}{\text{time}}$

	Distance	Time	Speed
1 Train journey from London to Cardiff	240 km	2 hours	..... km/h
2 Royal Navy ship	180 km	..... hours	60 km/h
3 Cheetah	..... km	50 seconds	30 m/s
4 1500 m runner	1500 m	3 min 20 s	..... m/s
5 Racing car	5 km	..... seconds	50 m/s
6 Light from Sun to Earth	..... km	480 seconds	300 000 000 m/s

Please write the formula number in front of the question which you think is the best choice to solve the question.

4 The rocket shown in Figure 2.12 lifts off from rest with an acceleration of 20 m s^{-2}. Calculate its velocity after 50 s.

5 The car shown in Figure 2.13 is travelling along a straight road at 8.0 m s^{-1}. It accelerates at 1.0 m s^{-2} for a distance of 18 m. How fast is it then travelling?

6 A train (Figure 2.14) travelling at 20 m s^{-1} accelerates at 0.50 m s^{-2} for 30 s. Calculate the distance travelled by the train in this time.

7 The cyclist in Figure 2.15 is travelling at 15 m s^{-1}. She brakes so that she doesn't collide with the wall. Calculate the magnitude of her deceleration.

equation 1: $v = u + at$

equation 2: $s = \frac{(u+v)}{2} \times t$

equation 3: $s = ut + \frac{1}{2}at^2$

equation 4: $v^2 = u^2 + 2as$