TIME

Pearson Edexcel – Thursday 4 June 2020 - Paper 2 (Calculator) Higher Tier

1.

19 A hot air balloon is descending.
   The height of the balloon n minutes after it starts to descend is h_n metres.

   The height of the balloon $(n+1)$ minutes after it starts to descend, h_{n+1} metres, is given by

   $$h_{n+1} = K \times h_n + 20 \quad \text{where } K \text{ is a constant.}$$

   The balloon starts to descend from a height of 1200 metres at 0915
   At 0916 the height of the balloon is 1040 metres.

   Work out the height of the balloon at 0918

   .... m

   (Total for Question 19 is 4 marks)

Pearson Edexcel – Monday 8 June 2020 - Paper 3 (Calculator) Higher Tier

2.

2 Andy cycles a distance of 30 km at an average speed of 24 km/h.
   He then runs a distance of 12 km at an average speed of 8 km/h.

   Work out the total time Andy takes.
   Give your answer in hours and minutes.

.... hours .... minutes

(Total for Question 2 is 3 marks)

Pearson Edexcel - Tuesday 11 June 2019 - Paper 3 (Calculator) Higher Tier

3.

11 In May 2019, the distance between Earth and Mars was 3.9×10^7 km.

In May 2019, a signal was sent from Earth to Mars.
Assuming that the signal sent from Earth to Mars travelled at a speed of 3×10^5 km per second,

(a) how long did the signal take to get to Mars?

.... seconds

(2)

The speed of the signal sent from Earth to Mars in May 2019 was actually less than 3×10^5 km per second.

(b) How will this affect your answer to part (a)?

....

....

....

(1)

(Total for Question 11 is 3 marks)

Pearson Edexcel - Tuesday 6 November 2018 - Paper 1 (Non-Calculator) Higher Tier

4.

4 It would take 120 minutes to fill a swimming pool using water from 5 taps.

(a) How many minutes will it take to fill the pool if only 3 of the taps are used?

.... minutes

(2)

(b) State one assumption you made in working out your answer to part (a).

....

....

(1)

(Total for Question 4 is 3 marks)

5.

5 Lara is a skier.

She completed a ski race in 1 minute 54 seconds.
The race was 475 m in length.

Lara assumes that her average speed is the same for each race.

(a) Using this assumption, work out how long Lara should take to complete a 700 m race.
Give your answer in minutes and seconds.

.... minutes .... seconds

(3)

Lara's average speed actually increases the further she goes.

(b) How does this affect your answer to part (a)?

....

....

(1)

(Total for Question 5 is 4 marks)

6.

10 Here are three lamps.

lamp A   lamp B   lamp C

Lamp A flashes every 20 seconds.
Lamp B flashes every 45 seconds.
Lamp C flashes every 120 seconds.

The three lamps start flashing at the same time.

How many times in one hour will the three lamps flash at the same time?

....

(Total for Question 10 is 3 marks)

7.

13 The diagram shows a swimming pool in the shape of a prism.
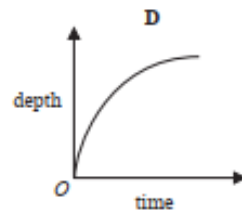
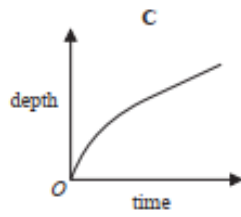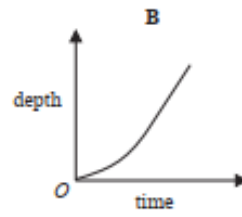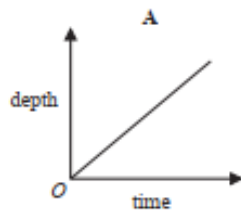Diagram **NOT** accurately drawn

10m

1m   15m

6m   2m   N

M
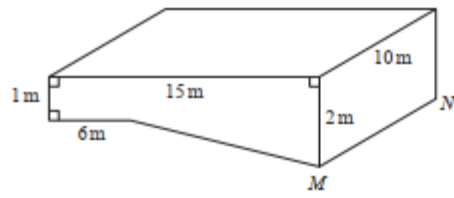
The swimming pool is empty.

The swimming pool is filled with water at a constant rate of 50 litres per minute.

(a) Work out how long it will take for the swimming pool to be completely full of water.
   Give your answer in hours.
   ($1\,m^3 = 1000$ litres)

.... hours

(5)

Here are four graphs.

A

depth | time

B

depth | time

C

depth | time

D

depth | time

(b) Write down the letter of the graph that best shows how the depth of the water in the pool above the line *MN* changes with time as the pool is filled.

....

(1)

(Total for Question 13 is 6 marks)

Pearson Edexcel - Friday 13 June 2014 - Paper 2 (Calculator) Higher Tier

8.

6 Sue is driving home from her friend's house.

Sue drives

  10 miles from her friend's house to the motorway
  240 miles on the motorway
  5 miles from the motorway to her home

Sue

  takes 20 minutes to drive from her friend's house to the motorway
  drives at an average speed of 60 mph on the motorway
 takes 25 minutes to drive from the motorway to her home

Sue stops for a 30 minute rest on her drive home.

Sue leaves her friend's house at 9.00 am.

What time does Sue get home?
You must show all your working.

....

(Total for Question 6 is 3 marks)

Pearson Edexcel - Tuesday 11 June 2013 - Paper 1 (Non-Calculator) Higher Tier

9.

17 Sumeet has a pond in the shape of a prism.

Diagram **NOT** accurately drawn
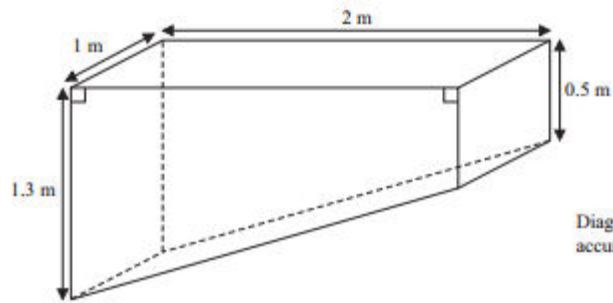
The pond is completely full of water.
Sumeet wants to empty the pond so he can clean it.
Sumeet uses a pump to empty the pond.

The volume of water in the pond decreases at a constant rate.
The level of the water in the pond goes down by 20 cm in the first 30 minutes.

Work out how much more time Sumeet has to wait for the pump to empty the pond completely.

....

(Total for Question 17 is 6 marks)

Pearson Edexcel - Friday 14 June 2013 - Paper 2 (Calculator) Higher Tier

10.

6   Tame Valley is a company that makes yoghurt.

A machine fills trays of 20 pots with yoghurt.
In one hour, the machine fills a total of 15 000 pots.

Work out how many seconds the machine takes to fill each tray of 20 pots.

.... seconds

(Total for Question 6 is 4 marks)

Pearson Edexcel - Thursday 28 February 2013 - Paper 1 (Non-Calculator) Higher Tier

11.

8   Trams leave Piccadilly

to Eccles every 9 minutes

to Didsbury every 12 minutes

A tram to Eccles and a tram to Didsbury both leave Piccadilly at 9 am.

At what time will a tram to Eccles and a tram to Didsbury next leave Piccadilly
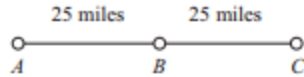at the same time?

....

(Total for Question 8 is 3 marks)

Pearson Edexcel - Thursday 8 November 2012 - Paper 2 (Calculator) Higher Tier

12.

5

25 miles   25 miles

○————————○————————○
A   B   C

A, B and C are 3 service stations on a motorway.

AB = 25 miles
BC = 25 miles

Aysha drives along the motorway from A to C.

Aysha drives at an average speed of 50 mph from A to B.
She drives at an average speed of 60 mph from B to C.

Work out the difference in the time Aysha takes to drive from A to B and the time Aysha
takes to drive from B to C.
Give your answer in minutes.

.... minutes

(Total for Question 5 is 3 marks)

Pearson Edexcel - Monday 11 June 2012 - Paper 1 (Non-Calculator) Higher Tier

13.

7   Buses to Acton leave a bus station every 24 minutes.
    Buses to Barton leave the same bus station every 20 minutes.

    A bus to Acton and a bus to Barton both leave the bus station at 9 00 am.

    When will a bus to Acton and a bus to Barton next leave the bus station at the same time?

....

(Total for Question 7 is 3 marks)

Pearson Edexcel - Wednesday 9 November 2011 - Paper 3 (Non-Calculator) Higher Tier

14.

6.

Reading				
22	Slough			
28	40	Guildford		
30	22	47	Oxford	
45	28	66	25	Buckingham

The table gives distances in miles by road between some towns.

Izzy lives in Oxford.
She has to drive to a meeting in Buckingham and then from Buckingham to Reading to pick up a friend.
After she picks up her friend she will drive back to Oxford.
She plans to drive at a speed of 50 miles per hour.
The meeting will last 3 hours, including lunch.
She leaves Oxford at 9 am.

Work out the time at which she should get back to Oxford.

....

(Total 4 marks)

OCR GSCE – Thursday 5 November 2020 – Paper 5 (Non-Calculator) Higher Tier

15.

6   A clock chimes every 20 minutes.
A light flashes every 8 minutes.
The clock chimes and the light flashes together at 08:00.

How many times between 08:01 and 12:30 will the clock chime and the light flash together?
Show your working.

.... **[5]**

4 A bus timetable shows the following information.

- A bus following route T leaves for the train station every 20 minutes.
- A bus following route A leaves for the airport every 18 minutes.
- A bus following route T and a bus following route A both leave at 8.37 am.

(a) When is the next time one of each bus is timetabled to leave at the same time?

(a) .... [4]

(b) Write down one assumption that was necessary to solve this problem.

....

.... [1]

17.

9   Alexander, Reiner and Wim each watch a different film.

- Alexander's film is thirty minutes longer than Wim's film.
- Reiner's film is twice as long as Wim's film.
- Altogether the films last 390 minutes.

How long is each of their films?

Alexander's film .... minutes

Reiner's film .... minutes

Wim's film .... minutes

[4]

21   Priya and Joe travel the same 16.8 km route.

Priya starts at 9.00 am and walks at a constant speed of 6 km/h

Joe starts at 9.30 am and runs at a constant speed.

Joe overtakes Priya at 10.20 am

At what time does Joe finish the route?

[5 marks]

Answer _____

19.

25   15 machines work at the same rate.

Together, the 15 machines can complete an order in 8 hours.

3 of the machines break down after working for 6 hours.

The other machines carry on working until the order is complete.

In total, how many hours does **each** of the other machines work?

[3 marks]

Answer _____ hours

12   The distance by road from Newport to London is 140 miles.

Tom travels by coach from Newport to London.
The coach leaves Newport at 1.30 pm

12 (a)   He assumes the coach will travel at an average speed of 50 mph

Use his assumption to work out the arrival time in London.

[3 marks]

_____

_____

_____

_____

_____

_____

Answer _____

12 (b)   In fact, the coach has a lower average speed.

How does this affect the arrival time?

[1 mark]

_____

_____

17   To complete a task in 15 days a company needs

   4 people each working for 8 hours per day.

The company decides to have

   5 people each working for 6 hours per day.

Assume that each person works at the same rate.

17 (a)   How many days will the task take to complete?
You **must** show your working.

[3 marks]

_____

_____

_____

_____

_____

_____

_____

_____

_____

Answer _____

17 (b)   Comment on how the assumption affects your answer to part (a).

[1 mark]

_____

_____

_____