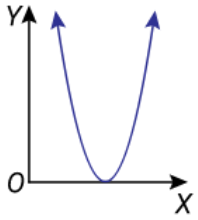
Year 9 Class 11 questions

Q1

Consider the graph. Which statement is true?



- ○ *X* and *Y* are inversely proportional.
- ○ *X* and *Y* are directly proportional.
- ○ *X* and *Y* are not proportional.

Q2

A campervan is hired with a $600 hire fee plus a charge of $1.50 per kilometre travelled. Given that C = cost and k = kilometres travelled.

Which is the cost function for the campervan?

- ○ C = 1.5 + 600 k
- ○ C = 600 + 1.5 k
- ○ C = 600 + 150 k
- ○ C = 6 + 1.5 k

How much is the hire charge for an 800 km trip?

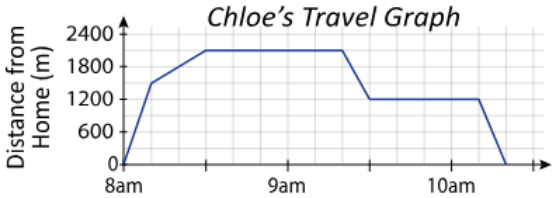
$ ____

How far did Con and Isaac travel if the hire charge was $2400?

____ km

Q3

Chloe leaves home at 8am to go to Ava's. She jogs for a while then walks the rest of the way. Later on Chloe's mum picks her up and they go to the shops.



How long did Chloe take to get to Ava's?

____ minutes

How far did Chloe *jog* on the way to Ava's?

____ metres

How far did Chloe *walk* on the way to Ava's?

____ metres

How far is Ava's home from Chloe's?

____ metres

How long did Chloe stay at Ava's?

____ minutes

How long did Chloe stay at the shops?

____ minutes

Q4

Ellis is paid $67.15 to deliver 395 newspapers. How much is he paid per newspaper?

$ ____

Q5

Zac is paid an annual 17.5% holiday loading on 4 weeks normal wages. Calculate his 4-week holiday pay (including loading) if he earns $2273.60 per fortnight.

$ ____

Q6

Austin bought a TV marked for $780 on terms. He paid a 10% deposit and $18.72 per month for 5 years.

Find the balance owing after paying the deposit.

$ [ ]

Find the total paid for the TV.

$ [ ]

Find the amount of interest paid.

$ [ ]

Find the annual interest rate.

[ ] % p.a.

Q7

Consider the table of values. Which statement is true?

x	1	2	3	4
y	12	6	4	3

- ○ y is directly proportional to x.
- ○ y is inversely proportional to x.
- ○ y is neither directly nor inversely proportional to x.

Q8

Consider the table of values. Which statement is true?

x	0	1	2	3
y	1	3	2	15

- ○ y is directly proportional to x.
- ○ y is inversely proportional to x.
- ○ y is neither directly nor inversely proportional to x.

Q9

A phone company charges a service fee of $27.50 per month, and 25 cents / call.

Write a cost function for a customer's monthly account, use C for cost and t for calls made.

C = [ ] + [ ] t

Find the cost in a month where 126 calls are made.

$ [ ]

If Mercedes received a bill for $134, how many calls did she make?

[ ]

Q10

The hire fee for a campsite is $32 plus $4 for each person per night.

Write a cost function for the campsite. Use C for cost and n for number of people.

C = [ ] + [ ] n

How much would it cost for a family of 6 to camp for one night?

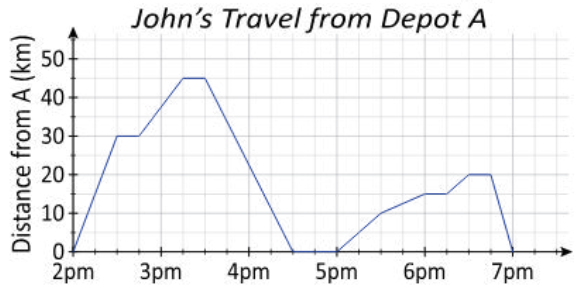
$ [ ]

A large group were charged $80 for a night's camping. How many people were in the group?

[ ]

Q11

John works as a courier delivering parcels.



How far was John from A at 2.30pm?

[ ] km

Find his average speed from 5pm to 6pm.

[ ] km/h

What was John's average speed from 2pm to 2.30pm? [ ] km/h

What was the total distance covered from 2.30pm to 4.30pm? [ ] km

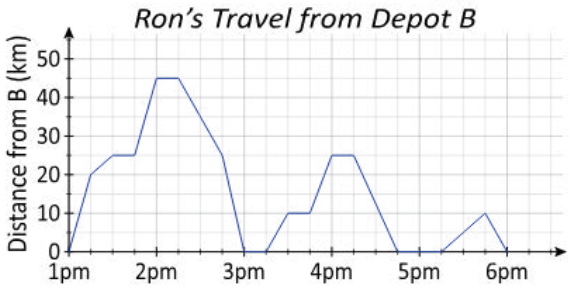
For how long did John stop when he returned to the depot for the first time?

[ ] minutes

Including stops, find his average speed from 2pm to 7pm. [ ] km/h

Q12

Ron works as a courier delivering parcels.



How far was Ron from B at 2.30pm?

[ ] km

Find his average speed from 1pm to 2pm.

[ ] km/h

What was Ron's average speed from 2.45pm to 3pm? [ ] km/h

What was the total distance covered from 3.45pm to 4.45pm? [ ] km

How long did Ron stop for when he returned to the depot for the 2nd time?

[ ] minutes

Including stops, find his average speed from 1pm to 6pm. [ ] km/h

Q13

Sam was paid $2719 for laying the Abbott's lawn. If he charged $115 plus $12.40 per square metre of lawn laid, find the area of the lawn.

[ ] m^2

Q14

Jaxon was paid $2430 for laying the Bell's lawn. If he charged $120 plus $13.20 per square metre of lawn laid, find the area of the lawn.

[ ] m^2

Q15

Will receives a holiday loading payment of $758.80. This is 17.5% of 4 weeks normal wages. Find his normal weekly wage.

$ ____

Q16

Annie receives a holiday loading payment of $606.20. This is 17.5% of 4 weeks normal wages. What is her normal fortnightly pay?

$ ____

Q17

Dominic bought a computer marked for $2600 on terms. He paid a 40% deposit and $39.26 per month for 5 years.

Find the balance owing after paying the deposit.

$ ____

Find the total paid for the computer.

$ ____

Find the amount of interest paid.

$ ____

Find the annual interest rate.

____ % p.a.

Q18

Daisy bought a lounge marked for $2400 on terms. She paid a 5% deposit and $73.34 per month for 4 years.

Find the balance owing after paying the deposit.

$ ____

Find the total paid for the lounge.

$ ____

Find the amount of interest paid.

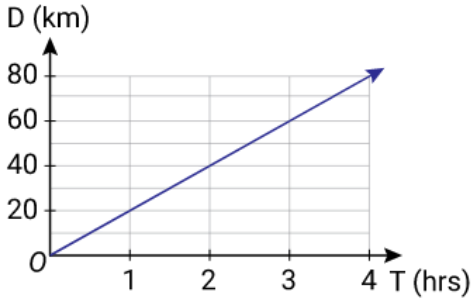
$ ____

Find the annual interest rate.

____ % p.a.

Q19

The graph shows the relationship between the distance travelled (D) and the time (T) spent travelling, for a cyclist travelling at a constant speed.



This is an example of ____ variation.

direct inverse

What is the distance travelled in 2 hours?

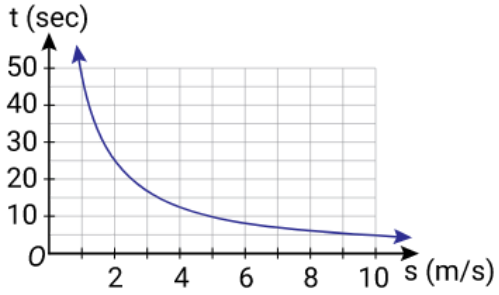
____ km

How long does it take to travel 60 km?

____ hours

Q20

The graph shows the relationship between the speed (s) of a runner and the time (t) taken to complete a race.



This is an example of ____ variation.

direct inverse

How long does it take to finish when running at a speed of 5 m/s?

____ sec

What speed is he running if he finishes the race in 25 seconds?

____ m/s

Q21

A geologist has two charges: A flat rate: $1070 for a survey. A variable rate: $120 per day + a contract fee of $350.

For what number of days will the variable fee be equal to his flat fee?

For a survey that takes 10 days, how much cheaper is the flat fee than the variable?

$

Q22

A landscaper has 2 different rates:

A *flat rate* of $550 per day; *or*

A *variable rate* of $250 per day + $50/h for each hour on the job.

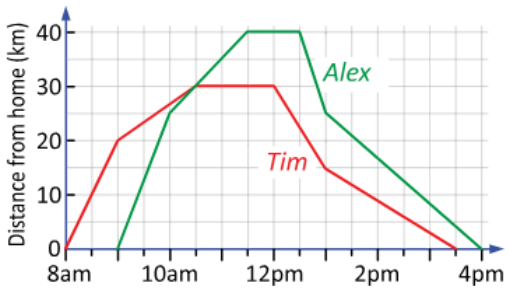
After how many hours is the variable rate equal to the flat rate?

hours

James hires the landscaper for a full 8-hour day. How much does he save by paying the flat rate?

$

Q23



The graph shows the cycling trips of two brothers (Alex and Tim) along the same route. When did Alex leave home?

○ 8 am ○ 8:30 am ○ 9 am ○ 9:30 am

When did Tim arrive back home?

○ 4 pm ○ 3:30 pm ○ 2 pm ○ 2:30 pm

When did Alex overtake Tim?

○ 10 am ○ 10:30 am ○ 11 am ○ 10:15 am

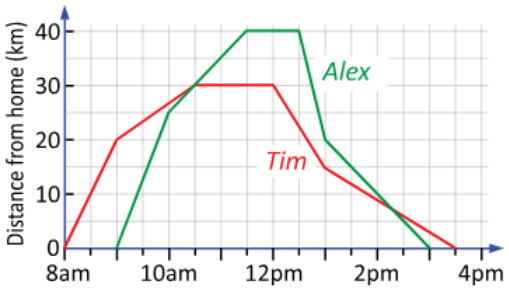
What was Tim's fastest speed?

○ 12 km/h ○ 15 km/h ○ 20 km/h

Tim's average speed for his whole trip is closest to

○ 8 km/h ○ 9.5 km/h ○ 11.4 km/h

Q24



The graph shows the cycling trips of two brothers (Alex and Tim) along the same route. How long did Alex rest for?

○ 30 min ○ 45 min ○ 60 min ○ 90 min

When did Alex pass Tim for the 2nd time?

○ 10 am ○ 10:30 am ○ 2.15 pm ○ 3 pm

How far did Tim travel altogether?

km

Find the fastest speed Alex reached.

○ 25 km/h ○ 30 km/h ○ 40 km/h

Alex's average speed for his whole trip is closest to

○ 13.3 km/h ○ 6.7 km/h ○ 15.7 km/h

Q25

Gary sells real estate and his commission on sales is: 4% on the first $280 000; 2% on the next $200 000; 1.5% on the remainder. Calculate his commission when selling a house for $820 000.

$ [ ]

Q26

Chris sells art works and his commission on sales is: 18% on the first $3000; 12% on the next $2500; 7.5% on the remainder. Calculate his commission when selling a painting for $9200.

$ [ ]

Q27

Elliot has just received $5658.80 which is made up of 4 weeks pay plus 17.5% annual holiday loading. How much does he normally earn per week?

$ [ ]

Q28

Ava has just received $4065.50 which is made up of 4 weeks pay plus 17.5% annual holiday loading. How much does she normally earn per week?

$ [ ]

Q29

Nancy purchases a laptop with a deposit of $225 and monthly instalments of $48 over 3 years.

Find the total amount she pays.

$ [ ]

If her deposit was 15% of the cash purchase price, how much extra does she pay purchasing by instalments?

$ [ ]

What annual interest rate was charged?

[ ] % (1d.p.)

Q30

Josh purchases a computer with a deposit of $280 and monthly instalments of $67.50 over 4 years.

Find the total amount he pays.

$ [ ]

If his deposit was 12.5% of the cash purchase price, how much extra does he pay purchasing by instalments?

$ [ ]

What annual interest rate was charged?

[ ] % (1d.p.)