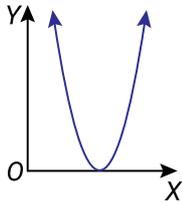


Year 9 Class 11 questions

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?

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

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

\$ \$1800

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

km 1200 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 30

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

metres 1500

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

metres 600

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

metres 2100

How long did Chloe stay at Ava's?

minutes 50

How long did Chloe stay at the shops?

minutes 40

Q4

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

\$ \$0.17

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.

\$ \$5342.96

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.

\$ \$702

Find the total paid for the TV.

\$ \$1201.20

Find the amount of interest paid.

\$ \$421.20

Find the annual interest rate.

% p.a. 12%

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.

$$C = \text{} + \text{} t$$

27.5 0.25

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

\$ \$59

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

426

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.

$$C = \text{} + \text{} n$$

32 4

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

\$ \$56

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

12

Q11

John works as a courier delivering parcels.



How far was John from A at 2.30pm?

km 30

Find his average speed from 5pm to 6pm.

km/h 15

What was John's average speed from 2pm to 2.30pm? km/h 60

What was the total distance covered from 2.30pm to 4.30pm? km 60

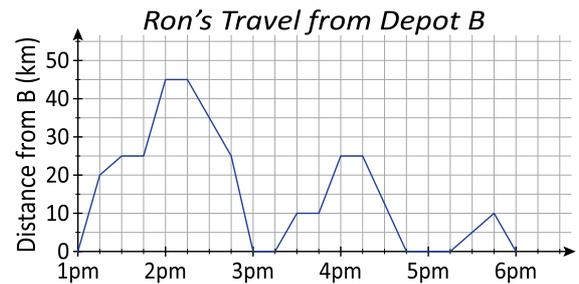
For how long did John stop when he returned to the depot for the first time?

minutes 30

Including stops, find his average speed from 2pm to 7pm. km/h 26

Q12

Ron works as a courier delivering parcels.



How far was Ron from B at 2.30pm?

km 35

Find his average speed from 1pm to 2pm.

km/h 45

What was Ron's average speed from 2.45pm to 3pm? km/h 100

What was the total distance covered from 3.45pm to 4.45pm? km 40

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

minutes 30

Including stops, find his average speed from 1pm to 6pm. km/h 32

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.

m² 210m²

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.

m² 175m²

Q15

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

\$ \$1084

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?

\$ \$1732

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.

\$ \$1560

Find the total paid for the computer.

\$ \$3395.60

Find the amount of interest paid.

\$ \$795.60

Find the annual interest rate.

% p.a. 10.2%

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.

\$ \$2280

Find the total paid for the lounge.

\$ \$3640.32

Find the amount of interest paid.

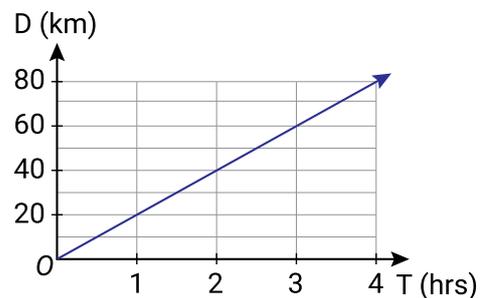
\$ \$1240.32

Find the annual interest rate.

% p.a. 13.6%

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 **direct**
inverse

What is the distance travelled in 2 hours?

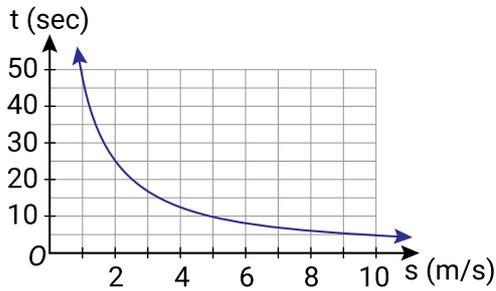
km
40

How long does it take to travel 60 km?

hours
3

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**
inverse

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

sec

10

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

m/s

2

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?

6

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

\$ **\$480**

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.

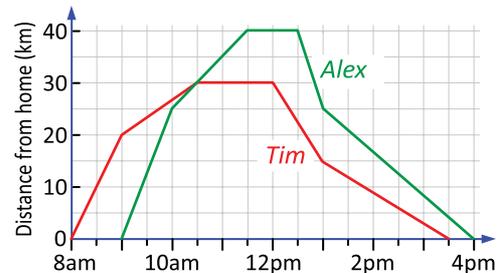
After how many hours is the variable rate equal to the flat rate?

hours **6**

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

\$ **\$100**

Q23



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

8am 8:30am 9am 9:30am

When did Tim arrive back home?

4pm 3:30pm 2pm 2:30pm

When did Alex overtake Tim?

10am 10:30am 11am 10:15am

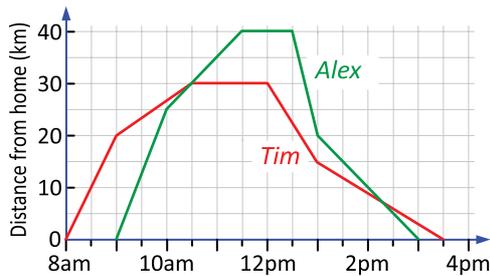
What was Tim's fastest speed?

12km/h 15km/h 20km/h

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

8km/h 9.5km/h 11.4km/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?

- 10am 10:30am 2.15pm 3pm

How far did Tim travel altogether?

km 60km

Find the fastest speed Alex reached.

- 25km/h 30km/h 40km/h

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

- 13.3km/h 6.7km/h 15.7km/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.

\$ \$20 300

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.

\$ \$1117.50

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?

\$ \$1204

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?

\$ \$865

Q29

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

Find the total amount she pays.

\$ \$1953

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

\$ \$453

What annual interest rate was charged?

% (1d.p.) 11.8%

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.

\$ \$3520

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

\$ \$1280

What annual interest rate was charged?

% (1d.p.) 16.3%
