QUESTION ONE

A snail slides along at 12cm every 20 minutes. What is its speed in km/day?

ATTEMPT 1	ATTEMPT 2	ATTEMPT 3	ATTEMPT 4	ATTEMPT 5

QUESTION TWO

There are four different symbols in the table. Each symbol represents a number and each different symbol represents a different number. Each row and column has a total as shown. What is the value of the number in the cell '?'

&	#	#	#	?
^	&	&	^	40
^	@	^	^	21
@	@	@	@	48
35	47	38	24	

ATTEMPT 1	ATTEMPT 2	ATTEMPT 3	ATTEMPT 4	ATTEMPT 5

QUESTION THREE

Cliff, Steve and Wayne sat a maths test. Wayne scored 57%. Steve scored $\frac{2}{3}$ of Wayne's score. The mean score of all three was 55%. What did Cliff score?

ATTEMPT 1	ATTEMPT 2	ATTEMPT 3	ATTEMPT 4	ATTEMPT 5

QUESTION FOUR

20 people were offered a meal consisting of fish and ham.
11 ate fish.
7 ate ham.
7 had neither.
How many had both fish and ham?

ATTEMPT 1	ATTEMPT 2	ATTEMPT 3	ATTEMPT 4	ATTEMPT 5

QUESTION FIVE

The ratio of the speed of a cheetah to the speed of a tortoise is 210:7.
How metres head start must the cheetah give the tortoise in a 300 metre race
in order for the two to cross the finish line abreast?

ATTEMPT 1	ATTEMPT 2	ATTEMPT 3	ATTEMPT 4	ATTEMPT 5

QUESTION SIX

In a game of rugby, a try is worth 5 points, a conversion worth 2 points and a
penalty 3 points. The number of conversions can never exceed the number of
tries. If the All Blacks scored 25 points, in how many possible ways could it
have been done?
You may have only one attempt at this question.

ATTEMPT 1	ATTEMPT 2	ATTEMPT 3	ATTEMPT 4	ATTEMPT 5

QUESTION SEVEN

A family has four sisters. Judy is the eldest. Sarah is 3 years younger than Judy, Danika is 4 years younger than Sarah and Kate is 5 years younger than Danika. Their ages when added up total 50.
How old is Danika?

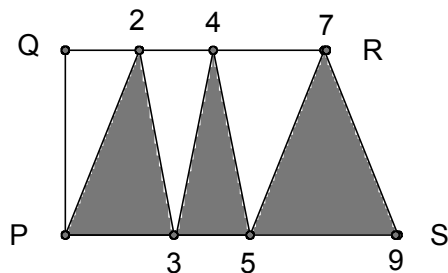| ATTEMPT 1	ATTEMPT 2	ATTEMPT 3	ATTEMPT 4	ATTEMPT 5

QUESTION EIGHT

A new tyre is designed to last 50,000km before wearing out. If a motorist buys five new tyres (includes one for the spare tyre) and rotates them on the car so that all five get the same amount of wear, how many km will the car travel before all the tyres are worn out?

ATTEMPT 1	ATTEMPT 2	ATTEMPT 3	ATTEMPT 4	ATTEMPT 5

QUESTION NINE

What fraction (simplified) of the trapezium PQRS shown below is shaded?

ATTEMPT 1	ATTEMPT 2	ATTEMPT 3	ATTEMPT 4	ATTEMPT 5

QUESTION TEN

Light filters are designed to reduce the amount of ultraviolet light getting through. The percentage given alongside each filter indicates the amount of ultraviolet light being <u>blocked</u> by the filter. Four filters are placed together as shown.

<div style="text-align:center">

_____ 10%
_____ 20%
_____ 30%
_____ 40%

</div>
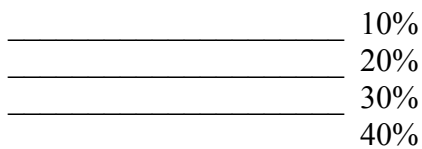
What percentage of ultraviolet light gets through?

ATTEMPT 1	ATTEMPT 2	ATTEMPT 3	ATTEMPT 4	ATTEMPT 5

QUESTION ELEVEN

If 5 men can eat 4 pizzas in 3 minutes, how many minutes would it take 6 men to eat 8 pizzas?

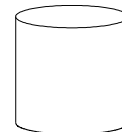| ATTEMPT 1	ATTEMPT 2	ATTEMPT 3	ATTEMPT 4	ATTEMPT 5

QUESTION TWELVE

Two trains are headed towards each other on a dual carriage railway line. The 300 metre long Great Northern Express is travelling at 50km/hr and the front of the train is currently 700 metres from a 1.5km long tunnel. The 400 metre long Great Southern Express is travelling at 80 km/hr and the front of the train is 1 kilometre from the opposite end of the same tunnel. At the very moment the Great Northern Express is completely out of the tunnel, what is the gap in kilometers between the two trains?

ATTEMPT 1	ATTEMPT 2	ATTEMPT 3	ATTEMPT 4	ATTEMPT 5

QUESTION THIRTEEN

A steel container, when filled with chemicals weighs 56kg. The same container weighs 37kg when half filled with chemicals. What does the empty steel container weigh?

ATTEMPT 1	ATTEMPT 2	ATTEMPT 3	ATTEMPT 4	ATTEMPT 5

QUESTION FOURTEEN

An eight man rowboat travels at 10 km/hr in still water. The boat is launched in the Waikato river where a 2 km/hr current is flowing. The boat heads upstream and at some point turns quickly and heads back to its starting point. The entire journey takes 100 minutes. How far upstream did the boat travel?

ATTEMPT 1	ATTEMPT 2	ATTEMPT 3	ATTEMPT 4	ATTEMPT 5

QUESTION FIFTEEN

What value comes next in this table?

x	0	1	2	3	4	5	6
y	6	24	60	120	210	336	?

ATTEMPT 1	ATTEMPT 2	ATTEMPT 3	ATTEMPT 4	ATTEMPT 5

QUESTION SIXTEEN

Perfect squares are numbers like 9 (3 squared) or 16 (4 squared).
How many two-digit numbers have digits whose sum is a perfect square?

ATTEMPT 1	ATTEMPT 2	ATTEMPT 3	ATTEMPT 4	ATTEMPT 5

QUESTION SEVENTEEN

My watch loses time steadily at a rate of 96 minutes every day. If it shows
the correct time at 2am, what is the correct time when the watch shows 4pm
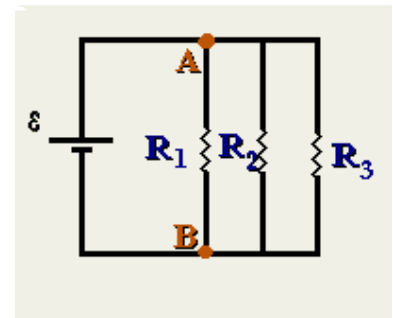on the same day?

ATTEMPT 1	ATTEMPT 2	ATTEMPT 3	ATTEMPT 4	ATTEMPT 5

QUESTION EIGHTEEN

In an electrical circuit the value of the total resistance R
is given by the rule:

$$\frac{1}{R} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$$

If $R = 2$, $R_1 = 10$, $R_2 = R_3$, find the value of R_3.

ATTEMPT 1	ATTEMPT 2	ATTEMPT 3	ATTEMPT 4	ATTEMPT 5

QUESTION NINETEEN

If 50^0 Celcius is equivalent to 8^0 Mercury, and 122^0 Celcius is equivalent to 40^0 Mercury.

If there is a linear relationship between degrees Celcius and degrees Mercury, then 212^0 Celcius is equivalent to what degree of Mercury?

ATTEMPT 1	ATTEMPT 2	ATTEMPT 3	ATTEMPT 4	ATTEMPT 5

QUESTION TWENTY

Ian puts the plug in a bath and runs the cold tap. It takes 6 minutes to fill the bath. He then empties the bath, replaces the plug and turns on the hot tap only. It takes 10 minutes to fill the bath. He then empties the bath and replaces the plug. If he turns both taps on at the same time, how long will it take him to fill the bath assuming the taps always run at the same rate? *State your units clearly.*

ATTEMPT 1	ATTEMPT 2	ATTEMPT 3	ATTEMPT 4	ATTEMPT 5

Q'n	ANSWER
1	0.00864 km/day (units not required)
2	35
3	70 or 70%
4	5
5	290m (units not required)
6	5
7	11
8	62,500 km (units not required)
9	$\dfrac{9}{16}$ (must be simplified)
10	30.24% Accept rounded answers: 30%, 30.2% (% not required)

Q'n	ANSWER
11	5 minutes (units not required)
12	2.6 km (units not required)
13	18 kg (units required)
14	8 km (units not required)
15	504
16	17
17	5pm or 17:00 (must have the pm if 12 hour time is used)
18	5
19	80 or 80^0
20	3.75minutes or $3\frac{3}{4}$ minutes, or 3 minutes 45 seconds (units required)