TSA Week 4 Questions

Sometimes poverty is defined in relation to average income. For example, people may be said to be poor if their income is less than 60 per cent of the average income for the population. This is not a legitimate definition, because it is a measure of inequality rather than poverty. This is obvious if we consider the consequences of using the definition. It means that a huge pay rise for middle managers automatically throws some people into poverty, even though their income has not changed. On the other hand, the definition implies that in a society where almost everyone is starving, no one is poor.

Which of the following best expresses the main conclusion of the above argument?

A Having a relatively low income is not the same as being poor.
B It is impossible to find an appropriate definition of poverty.
C It is wrong to define poverty in relation to average income.
D A huge pay rise for middle managers makes other people poor.
E There is no inequality in a society where most people are starving.

Question Two (6)

Steven has a customised motorcycle that he is very proud of and shows regularly in competitions. It is very important to him that his presentation is perfect and he likes to stop in front of the judges with both his tyre valves in the same position. The front tyre is smaller than the rear to aid its handling. The circumference of the front wheel is 2m and the circumference of the rear wheel is 2.5m. Steven starts with both valves in the same position at the bottom of each wheel.

How far must he drive before the valves line up again at the bottom of each wheel?

A 2.0 m
B 2.5 m
C 4.5 m
D 10.0 m
E 12.5 m

7 I have so many four digit code numbers to remember that I cannot keep them all in my head. The banks say you should not write down your Personal Identification Numbers (PINs) for cash and credit cards and keep them in a wallet with the cards. So I can find out what the numbers are, I have devised a code which should be complicated enough to confuse any thief who steals my wallet. I code all the numbers using 1=A, 2=B up to 9=I, 0=J. Then I write the coded numbers down backwards so 1234 is written DCBA. Finally at the end of each coded number I add an extra letter between A and J to say what that particular code is of: C is for credit card; F is for phone card; B is for bicycle lock combination; E is for my Eastern Bank card and D is for my Denton Building Society card.

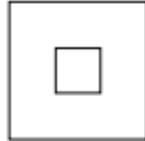My list looks as follows:

A D G E F
C J D B E
B G F A C
G J A C D
D F G C B

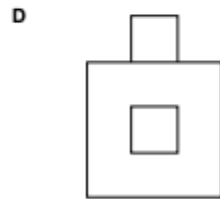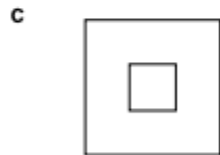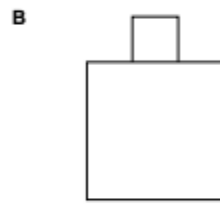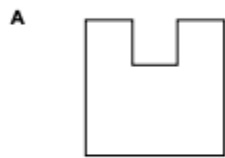What is my bicycle lock combination?

A   4673
B   5741
C   7613
D   4356
E   3764

Question Four (8)

8 The drawing shows a sculpture as seen from above.

Which of these could **not** be a view from one of the sides?

A

B

C

D

E

13 The chart below shows the distribution of results this season for the Arlsea Strikers hockey team. They have played 24 matches to date and lost none.
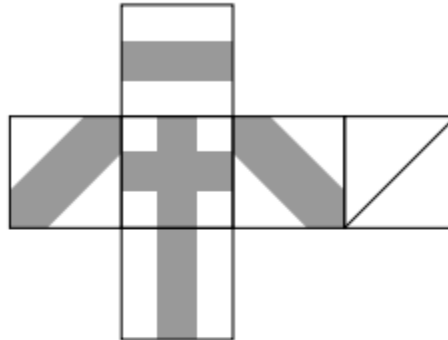
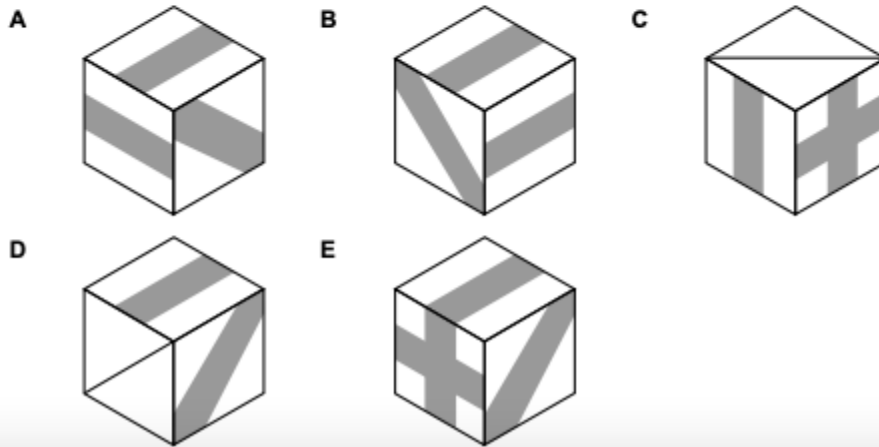

How many matches have they won?

A	4
B	6
C	14
D	16
E	18

14 The cut out below was folded together to make a cube.

Which of the following cubes was formed from this cut-out?

A B C

D E

Question Seven (32)

A netball tournament is divided into two stages. In the first stage, the teams are divided into equal groups within which each team plays every other team once. In the second stage, the winners of each group take part in a knockout competition which starts with four quarter finals. Which of the following could be the number of teams starting the tournament?

A 8
B 20
C 44
D 50
E 72

Question Eight (36)

36 Below is part of an itinerary for flying from London to Kampala. It involves changing flights at Dubai with a wait of 5 hours 15 minutes. All times are local times. Dubai is 4 hours ahead of London and Kampala is 1 hour behind Dubai.

DEPART LONDON (HEATHROW)	22:30 FRI 30.01.04
DEPART DUBAI	14:30 SAT 31.01.04
ARRIVE KAMPALA (ENTEBE)	20:45 SAT 31.01.04

What is the total time spent in the air?

A   12 hrs 30 mins

B   14 hrs 00 mins

C   15 hrs 00 mins

D   17 hrs 00 mins

E   19 hrs 15 mins

Question Nine

'Printing and the telephone were truly revolutionary inventions. All the internet brings is a difference in scale.' Is that true?

Think of some clever things to say! In what ways has internet changed lives? Is that different to printing and telephone? How did they change lives?

Question Ten

Would society be better if there were more scientists in positions of political power?

Two arguments for; two arguments against.

If you are absolutely 100% sure you are finished, you may ask me if you can do the additional question which is worth two marks. However, if you do the additional question and you get more than one of the first eight questions wrong, you will lose your team 3 marks!

In a class of *p* students, the mean of the test scores is 70.

In another class of *n* students, the average of the scores for the same test is 92.

When the scores of the two classes are combined, the average of the test scores is 86.

What is the value of p/n?