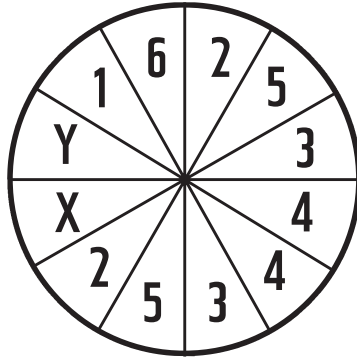


65 What are X and Y?



66 Which column does not conform?

A	B	C	D	E	F
17	14	22	31	29	33
9	13	15	22	19	8
13	11	17	17	31	19
24	7	2	13	5	20
2	29	8	4	2	17
10	6	21	3	10	3

67 The odometer in the car showed 15951 miles, a palindromic number. Two hours later the odometer once again was palindromic. How far had the car travelled?

68 If 3 (76) equals 212
and 4 (320) equals 125
what is:
5 (6100)?

69 Looking at the columns below, work out what X is.

2 1 8 5 9
3 7 2 6 2
4 2 1 1 X

70 What are X and Y?

7 8 6 9 5 10 X Y 3 12

71 Which is the odd number out?

3 11 17
7 15 29

Number

72 The local cricket team used 16 players during the season and each players' total score for the season was a palindromic prime number. No two players had the same score for the season. If you sum the 16 players' total score and then find the average you arrive at a 3-digit number that contains the same 3 digits. The lowest total was 11.

What was the average total?

73 What is the value of X in each of the following three diagrams?

5	4	9
3	5	8
2	7	x

A

32	35	39
42	46	51
3	8	x

B

A	E	J
D	x	O
F	L	S

C

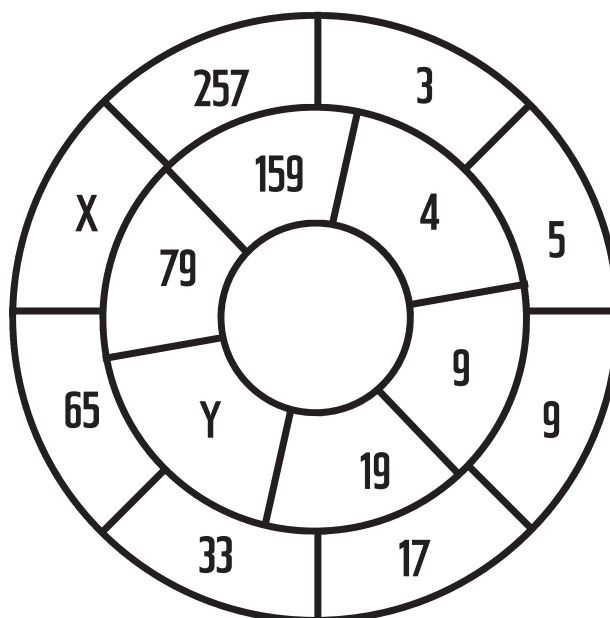
74 What number goes into the brackets?

64 (49) 144

85 (57) 119

144 () 90

75 Give values for X and Y.



76 A heavy smoker, worried about the high cost of tobacco, decided to economise by saving his cigarette ends and making new cigarettes from them.

He found that each cigarette end accounted for one-sixth of the whole cigarette. He smoked 36 cigarettes a day.

By using this method, how many EXTRA cigarettes was he able to obtain in a week?

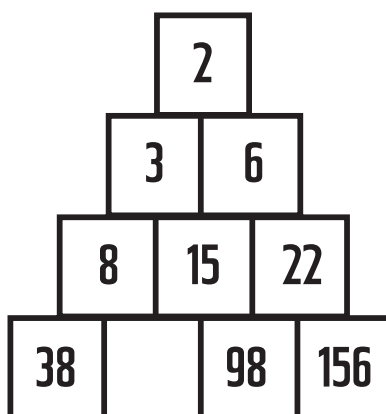
77 The casino game called craps is played with two dice 1-6 standard.

7 or 11 wins.

Which 3 numbers lose?

80 Sheffield is 100 miles from Worcester.
 At 1pm train A leaves Sheffield for Worcester and travels at a constant speed of 30mph.
 One hour later train B leaves Worcester for Sheffield and travels at a constant speed of 40mph.
 Each train makes one stop only at a station ten miles from its starting-point and remains there for fifteen minutes.
 Which train is nearer to Sheffield when they meet?

81 What number should go into the blank space?



82 What two terms complete this series?

A 1 D 4 H 8 M 13 _ _

83 What are X and Y?

7 8 6 9 5 10 X Y

84 Assuming four of these dates are correct, which one is wrong?

A Saturday 7 January 1764

B Saturday 21 January 1764

C Saturday 11 February 1764

D Saturday 11 March 1764

E Saturday 14 April 1764

85 Two square floors had to be tiled, covered in 12" square tiles. The number of tiles used was 850 in total.

Each side of one floor was 10' more than the other floor.

What were the dimensions of the two floors?

86

Boxes 1 + 2	weigh 12 KG
Boxes 2 + 3	weigh 13.5 KG
Boxes 3 + 4	weigh 11.5 KG
Boxes 4 + 5	weigh 8 KG
Boxes 1 + 3 + 5	weigh 16 KG

How much does each box weigh?

87 Add the difference between the two lowest numbers to the difference between the two highest numbers:

91 13 76 12 7 88 17 84
11 14 87 15 86 16 89 85

88 What are X and Y?

1 3 3 6 5 9 7 12 X Y

89 Subtract the sum of the three lowest numbers from the sum of the three highest numbers.

11 36 7 38 3 45
39 10 48 37 12 36

90 What is the last term in this series?

B 2 T 20 Q 17 G 7 C -

91 What is X?

4 9 X 25

Number

92 At a demonstration, protesters outnumbered the police by 8 to 1.

84 arrests were made, averaging 3 for every 2 policemen.

How many demonstrations were there?

93 A hand in bridge in which all 13 cards are a 9 or below is called a YARBOROUGH after the Second Earl of Yarborough (d. 1897) who frequented games schools and wagered 1000-1 against dealing such a hand.

Was he on to a good thing?

94 Which date does not conform with the others?

A 1417

B 1533

C 1605

D 1722

E 1812

F 1902

95 What comes next?

208 CIV 52 XXVI -

96 Which one is wrong?

A $\frac{9}{4} + 1.75 = 4$

B $\frac{9}{5} + 2.2 = 4$

C $\frac{6}{5} + 2.8 = 4$

D $\frac{6}{4} + 1.5 = 4$

E $\frac{9}{6} + 2.5 = 4$

97 Multiply the second highest number by the second lowest number and then divide the result by the third lowest number.

10 35 2 32 37 33 9

13 36 12 14 34 3 11

98 What is X?

3 6 10 15 X 28

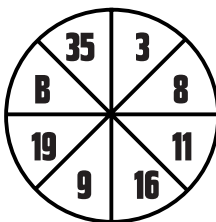
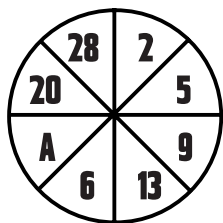
99 What numbers belong to A and B?

36 (35) 60

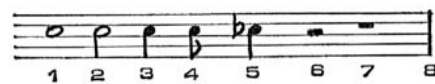
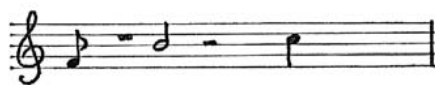
65 (58) 104

A (79) B

100 What numbers should take the place of A & B?



101 Can you compose music? Study the music below and decide which of the numbered symbols belong to A and B.



102 Murmansk, in Russia, is on a longitude 33 degrees east. Victoria Island, off Canada, is on longitude 110 degrees west. If you travelled due east from the North Pole, which would you reach first?

103 What numbers are represented by A and B?

4	5	6
7	8	1
5	3	A
B	9	7
9	9	1
7	6	7

104 'ERNIE' is a random number producer. Pi could also be said to be a random number producer, because the decimal equivalent is known to only 2000 million decimal places. Nobody knows the million millionth decimal place, each digit has the same chance to be the one.

So if you had a transcendental number which consists of random digits, what would be the average difference between two random digits side by side?

It should be $\frac{0+9}{2} = 4.5$

But it isn't. What is it?

105 Complete this sequence:

2 3 4 9 16 81 256

106 How many revolutions of 1 will take place in order to bring the black teeth into mesh with the other:

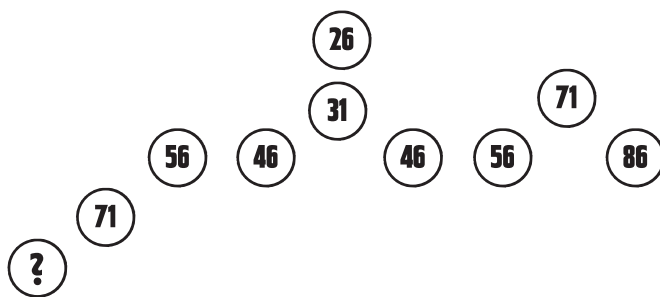
A If 1 rotates clockwise

B If 1 rotates anti clockwise?

1

2

107 What number should replace the question mark?



108 Jane is thinking of two whole numbers, and asks Freddy to work out what they are. The only clue she will give him is that their product is three times larger than their sum.

Can you work out what the two numbers are?

109 What number should replace the question mark?

$$\begin{array}{r} 51 \\ 4 \\ 39 \quad 3 \end{array}$$

$$\begin{array}{r} 71 \\ 2 \\ 61 \quad 5 \end{array}$$

$$\begin{array}{r} 90 \\ ? \\ 24 \quad 6 \end{array}$$

110 A man wagers £40.00 and wins back his original stake, plus £60.00. He spends $\frac{1}{10}$ of it on a meal and $\frac{1}{20}$ of it on a taxi fare home. He then buys a present for his wife which cost $\frac{1}{2}$ of what he has left.

How much more money does he have than when he started out?

111 Two professionals had no further teaching to do on the golf course, so they decided to have a match. They scored 79 and 81.

Amazingly, the 81 score won, they were not playing match play, how was that?

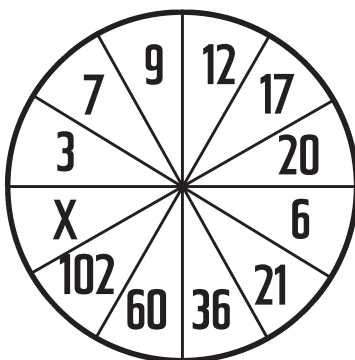
112 What is the difference between the lowest number and the average of all the numbers?

3 9 12 15 18 25 30

113 Square the lowest even number and subtract the result from the third highest odd number:

9 67 4 11 58 66
2 65 1 8 10 41
6 71 5 12 25 3
7 41 32 70 69 68

114 What is X?



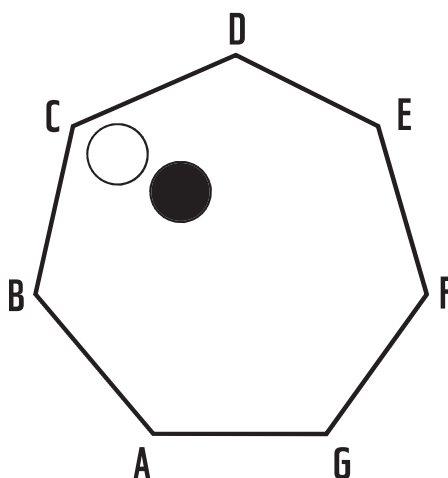
115 What comes next in the series?

16 72 38 94 50 -

116 The black ball moves one position at a time clockwise. The white ball moves two positions at a time anti-clockwise.

A In how many moves will they be together again?

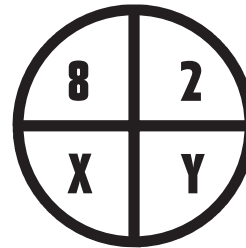
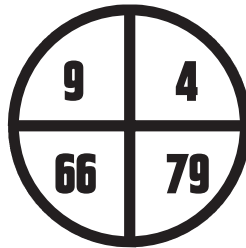
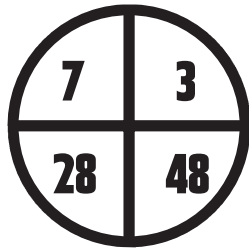
B In what corner will they be?



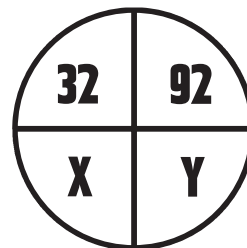
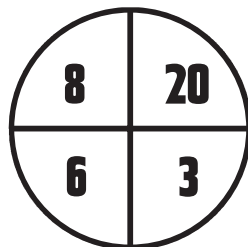
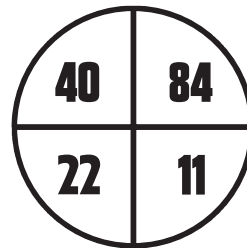
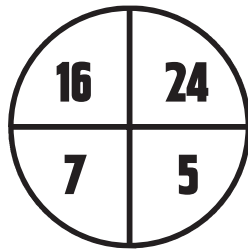
117 What is X?

1	2	3	4	5	6	7	8
7	14	1	2	2	1	8	7
10	3	4	18	2	1	8	6
8	5	11	12	2	21	3	4
2	11	6	3	13	1	2	10
2	5	5	1	6	10	2	X

118 What are X and Y?



119 What are X and Y?



120 What comes next in the series?

1072 1055 1021 953 817 545 -

121 In a 6 horse race the bookmaker needed to make a profit of 25% in order to cover his expenses, salary for his clerk, income tax and profit.

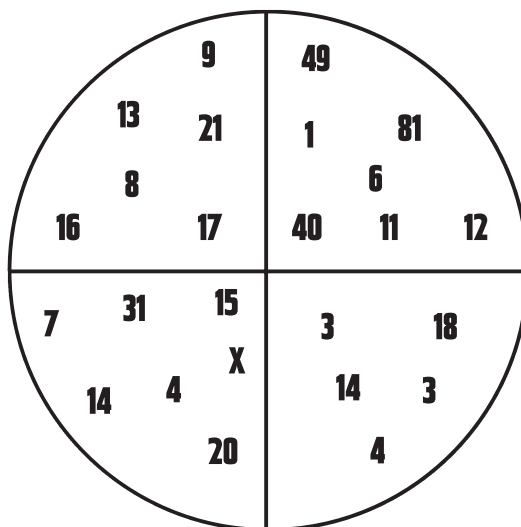
These were the prices, what price should be quoted for No. 6?

Horse No.	Against
1	2-1
2	3-1
3	4-1
4	5-1
5	6-1
6	?

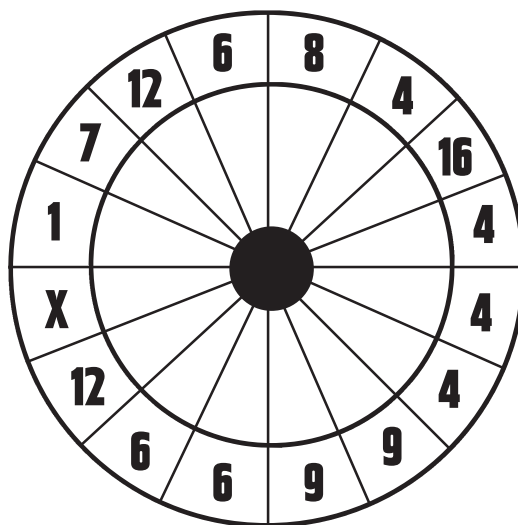
122 If : **4** equals **4**,
9 equals **7 1/2**,
16 equals **12**,
25 equals **17 1/2**,
36 equals **24**,
49 equals **31 1/2**,

What does **64** equal?

123 What is X?



124 What is X?



125 Insert arithmetical signs between these numbers to make the equation correct:

$$18 \ 2 \ 9 \ 24 \ 5 = 100$$

126 What is the total of the square of the lowest number, the square root of the highest number, and the number that is midway between the results?

168	9	4	167	162
8	5	161	7	163
169	6	166	10	3
11	12	165	14	164

127 The grass in a school playing field had to be cut.

One man could mow the grass in 4 hours
One man could mow the grass in 5 hours
One man could mow the grass in 6 hours
One man could mow the grass in 8 hours

If they all joined forces to cut the field and they all worked at their individual rates, how long would it take to cut the grass?

128 A factory was cutting rolls of doth into 1 metre lengths, from a 200 metre roll. How long would it take for the machine to cut the roll if each cut took 4 secs?

129 In a road with 20 houses:

Tom lives at number 4;

Bill lives four houses from Tom;

Jim lives opposite Bill's next door neighbour;

Fred lives four houses from Jim.

What is the number of Fred's house?



130 Reading across, down or diagonally, which three consecutive numbers give the highest total?

6	8	10	10	8	10
10	11	7	7	1	18
9	9	10	7	12	1
7	9	10	8	7	8
12	10	7	9	11	8
9	8	12	7	10	10

131 The black blocks each weigh 3 kilograms. The white blocks each weigh 2 kilograms. Which of these see-saws is wrong?

A

B

C

D

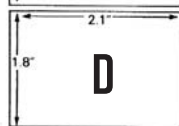
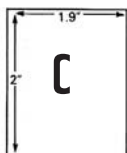
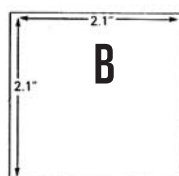
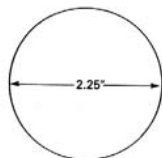
E

F

132 What are X and Y?

3 7 4 6 21 12 12 84 36 24 420 X Y

133 Given that the area of a circle is 3.14 times the square of its radius, and without using a pocket calculator, which of the figures below has an area nearest to that of the circle?



134 5 friends live in the same road A, B, C, D, E.

The numbers of B, C, D when multiplied together equals 1260. The numbers B, C, D when added equal twice E's number, and is even.

A's number is half as much again as E's. The road numbers run from 2 to 222.

What are the 5 house numbers?

135 A woman has 7 children.

On multiplying their ages together one obtains the number 6591.

Given that today is the birthday of all 7, what are their seven ages? There are two sets of triplets.

136 When the die shows an even number on top, the counter moves two places forward in addition to the number on the die.

When the die shows an odd number on top, the counter moves one place back in addition to the number on the die.

On what number will the counter be after seven throws of the die, producing the following numbers on top.

6 4 3 1 2 6 5

137 What goes into the empty brackets?

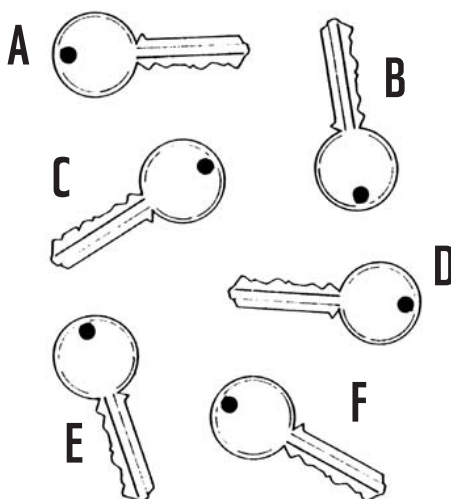
12 (27144) 3

13 (64169) 4

14 (125196) 5

15 () 6

138 Which key will not fit the lock?



139 Give values for x and y:

$$2X - Y = 5$$

$$X + Y = 16$$

$$Y - X = 2$$

140 What goes into the empty square?

0	7	2	4	12	6	3
	7	9	6		18	9

141 Given two numbers, if we subtract half of the smaller number from each number, the result with the larger number is three times as large as the result with the smaller number.

How many times is the larger number as large as the smaller number?

142 What number should replace the question mark to a definite rule?

147
159
174
186
?

143 A farmer told his labourer to pick 896,809 apples and pack them into as few boxes as possible, each having the same number of apples.

How many boxes did he use?

144 A driving school claims an average test pass rate of 76.8 per cent. What is the least number of pupils required to achieve this result?

145 How many combinations of three or four of these numbers will add up to 50?

2 4 6 8 10 17 19 21 25

146 A correspondent writes 7 letters and addresses 7 envelopes, one for each letter. In how many ways can all of the letters be placed in the wrong envelopes?



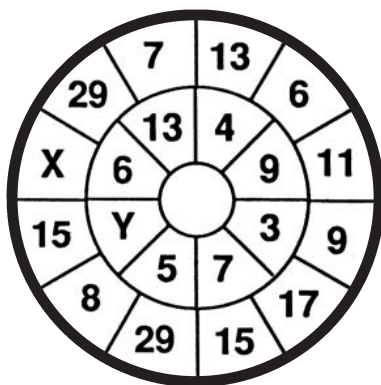
147 Which number in the bottom line belongs to the top line?

2 3 5 6 8 9 10 13
1 4 7 11 13 14 17 77

148 Which number in the bottom line comes next in the top line?

9 8 10 18 21 16 -
14 15 20 27

149 Give values for X and Y.



150 Every station on the railway system sells tickets to every other station.

Some new stations were added. 46 sets of additional sets of tickets were required.

How many new stations have been added? How many stations were there originally?

151 My friend had scored a hole in one.

There were 5 witnesses. Here is a list of their statements about which hole produced the amazing feat. It was an 18 hole course.

A Not an even number

B It had double digits

C The number was made up of only straight lines

D Not a prime number

E Not a square number

But only one statement was a true one.

Which hole was it?

152 What comes next in this series?

1 7 8 15 23 38 61 -

153 What number goes into the empty brackets?

98 (79) 126

105 (79) 135

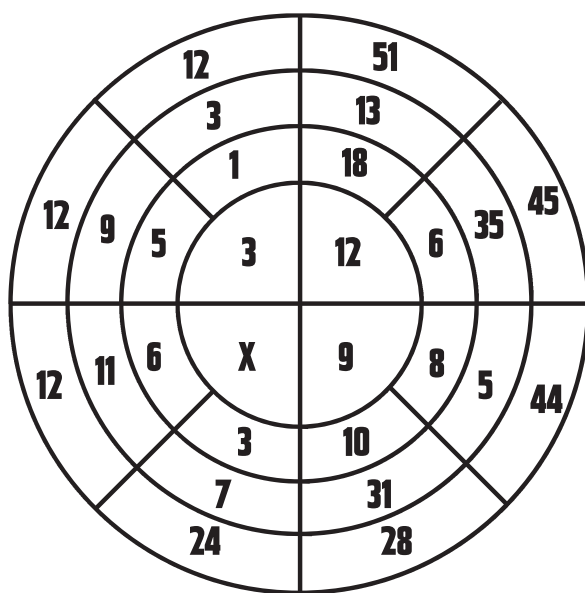
48 (35) 80

34 () 85

154 What are A, B and C?

$$\begin{array}{r}
 3 \ A \ 6 \\
 C \ 4 \ B \\
 \hline
 B \ 2 \ B \ A
 \end{array}$$

155 What is X?



156 What is X?

$$25 \ 22 \ 15 \ X \ 10 \ 19 \ 24$$

157 What are X and Y?

$$72 \ 7 \ 36 \ 14 \ 18 \ 28 \ 9 \ 56 \ X \ Y$$

158 Which is the odd one out?

- A. 1 6 3 4 9 2**
- B. 6 14 3 8 1 2**
- C. 19 7 5 23 3 4**
- D. 1 9 4 7 3 2**

159 What is X?

X 11 1098 76 5 43 21

160 What are X, Y and Z?

●	○	●	○	18
□	□	□	●	11
0	0	0	●	14
○	○	○	●	23
X	Y	Z	13	

161 Barbara visited her High School friend, Natasha after their 25th school reunion. "What a nice pair of children you have, are they twins?", Barbara asked.

"No my sister is older than I", said Natasha's son Philip. "The square of my age plus the cube of her age is 7148".

"The square of my age plus the cube of his age is 5274", said Matilda.

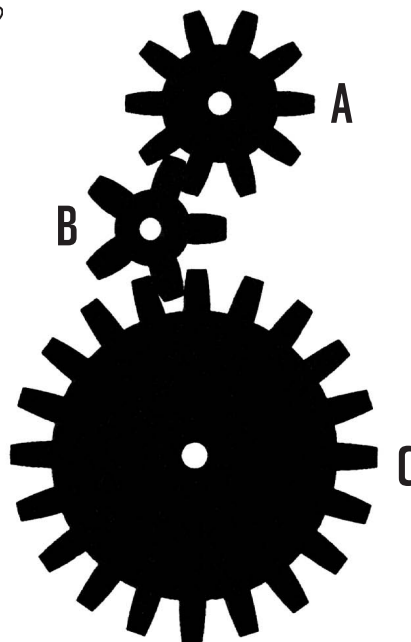
How old were they?

162 A train moving at 49 mph meets and is passed by a train moving at 63 mph. A passenger in the first train noted that the second train took 4.5 seconds to pass him.

How long is the second train?

163 What is the ratio between A and C?

- A. 2 to 1**
- B. 4 to 1**
- C. 1 to 1**
- D. 5 to 1**



164 A card player holds 13 cards of four suits, of which seven are black and six are red. There are twice as many hearts as clubs and twice as many diamonds as hearts. How many spades does he hold?

165 What is X?

$$131 \ 517 \ 192 \ X$$

166 Multiply the numbers that are midway between the lowest and highest numbers in A and B and subtract the midway number in C.

5	4	97
6	95	99
3	98	96

A

77	8	75
9	76	10
79	7	74

B

10	9	76
75	77	12
73	11	74

C

Number Answers

Answers

1 A 4, B 4

When correctly spaced they are:

A. 4 8 16 32 64 128

B. 19 38 76 152 304

2 808

Multiply the first two numbers in the preceding line;

multiply the next two numbers in the preceding line;

multiply the last two numbers in the preceding line

3 A is 9, B is 11, C is 8, D is 12

If the four corners are numbered:

1	2
3	4

the numbers in the four corners of the second overall square in each pair are as follows:

1+4	2+3
1+3	2+4

4 5

The numbers are the alphabetical positions of the letters, spelling FACADE:

6-F; 1-A; 3-C; 1-A; 4-D; 5-E.

5 D

D adds up to 36. The others add up to 33.

6 Turn the numbers upside down.

96

88

99

11

294

7 105

8 5 men, 10 children and 20 women

If x = the number of men, then $x + 2x + 4x = 35$
 therefore $7x = 35$
 so $x = 5$

9	EVEN	ODD	PRIME	SQUARE	2 DIGITS	6-12
1		✓		✓		
2	✓		✓			
3		✓	✓			
4	✓			✓		
5		✓	✓			
6	✓					✓
7		✓	✓			✓
8	✓					✓
9		✓		✓		✓
10	✓				✓	✓
11		✓	✓		✓	✓
12	✓				✓	✓
13		✓	✓		✓	✓
14	✓				✓	✓
15		✓			✓	✓
16	✓			✓	✓	✓

1 is not a prime number
 Square numbers are 1, 4, 9, 16

Only 4 ticks means 4 truths

So, 11 is the winner

10 ZERO

He had 3 white socks and 1 black sock in his drawer.
 His chances were:

White socks	Mixed Pair	Black socks
$\frac{1}{2}$	$\frac{1}{2}$	ZERO

11 B and C

They become:

5 4 1
 3 1 6
 2 5 3

Number Answers

12 55706065

In the first line multiply the digits outside the brackets by 2 in this order: extreme left, extreme right, second left and first right. In the second line multiply by 3 and in the third line by 4, following the same procedure. Therefore in the fourth line multiply by 5 and follow the same procedure.

13 A The lead flautist took $\frac{1}{19} \times 37 = 1 \frac{18}{19}$
Plus $\frac{1}{19}$ = $\frac{1}{19}$ = 2 and so on

He felt aggrieved because he was left with the least.

B 37

14 128

The consecutive numbers are: 9, 10, 11; 17, 18; 20, 21 and 22

15 1 6 2 7 8 4

The numbers outside the brackets are transposed inside the brackets in the same order as in the top line.

16 52

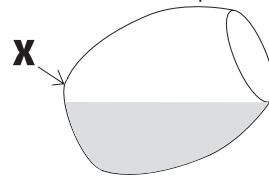
The results are increased by one and decreased by one alternately:

$$17 \times 3 = 51 + 1 = 52$$

17 A + ÷, **B** x ÷ or ÷ x or - + or +-, **C** x -, **D** xx

18 He tilted the butt until the water came up to the top edge without any running over. As the level of the water did not reach point X the butt was not half-full. If it had reached point X, it would have been exactly half full.

But if point X had been submerged it would have been more than half full.



19 5 6 2 5

The first number inside the brackets is the square root of the number outside the brackets.

The remaining number inside the brackets is the square of the number outside the brackets.

20 Three sisters and two brothers

This can be solved by simple deduction, but if algebra is used let x be the number of sisters and y the number of brothers:

$$x + 1 = 2y$$

$$y + 1 = x$$

Therefore, $y + 1 + 1 = 2y$

$$\text{so } y = 2$$

$$\text{or } x + 1 = 2x - 2$$

$$\text{so } x = 3$$

21 53

37 is midway between 3 (the lowest number) and 71 (the highest number); 53 is midway between 37 and 69 (nearest to the highest number).

22 59

The first 56 balls could be of all colours *except* red. This would leave 8 balls, all of which are red, so any three chosen would be red.

23 2 8 9 4.

The two numbers on the right of the *previous* brackets are the numbers on the left inside the brackets; the numbers on the left of the *previous* brackets are the numbers on the right inside the brackets.

24	100.00	Won by	Money in Wallet
	1st Hole	A	150.00
	2nd	A	225.00
	3rd	Tie	225.00
	4th	B	112.50
	5th	B	56.25
	6th	B	28.12
	7th	A	42.18
	8th	A	63.27
	9th	Tie	63.27
	10th	A	94.90
	11th	A	142.35
	12th	B	71.18

It is good way to wager if the 2 players are equal standard, B will always win money if he ties or loses by a few holes, but if A wins by a large number of holes, he will win a fortune.

B, if he won every hole, could only win £100, but A could win a fortune.

25 1.2cm

The measurement is reduced by $\frac{1}{13}$ (four cards removed from 52).

26 10

$$\begin{array}{r}
 70 \\
 75 \\
 85 \\
 + 80 \\
 \hline
 310 \div 3 = 100 \text{ remainder } 10
 \end{array}$$

3 subjects each student, 10 at least 4

27 6+10+13, 8+9+12, 5+6+18, 4+12+13, 8+10+11, 19+4+6, 11+6+12

Number Answers

28 87

The numbers are considered as moving clockwise in each successive large square. In each case they add to 100:

$$14 - 50 - 8 - 28$$

$$19 - 41 - 30 - 10$$

$$22 - 22 - 22 - 34$$

$$8 - 1 - 4 - 87 (X)$$

29 6380

The numbers inside the brackets are the squares of the numbers outside the brackets with 1 deducted. Alternatively, multiply 2, 4, 6 and 8 by 4, 6, 8 and 10 respectively and put the number at the end of the figure in the brackets, and multiply 3, 5, 7 and 9 by 1, 3, 5 and 7 respectively and put these numbers first.

30 12

	First face	Second face	Third face
1st move	1	2	6
2nd move	4	3	2
3rd move	6	5	1

31 Start the 7 and 11 min. hour glasses when the egg is dropped into the water when it is boiling. When the sand stops running in the 7 glass, turn it over. When the sand stops running in the 11 glass, turn the 7 glass again. When the sand stops again in the 7 glass, 15 mins. will have elapsed.

32 $X = G, Y = H$

33 E

All the others contain three consecutive digits.

34 The three throws do not have the same chances, because if the 1st throw scores a 6, the other 2 throws do not occur. So the first throw has the best chance.

$$\begin{array}{l}
 \text{1st throw} \quad \frac{1}{6} = \frac{6}{36} = \frac{36}{216} \\
 \text{2nd throw} \quad \frac{1 \times 5}{6 \times 6} = \frac{5}{36} = \frac{30}{216} \quad \frac{5}{6} = \text{1st throw losing} \\
 \text{3rd throw} \quad \frac{1 \times 5 \times 5}{6 \times 6 \times 6} = \frac{25}{216} \\
 \text{Total} \quad \frac{91}{216} \times \$100 \\
 = \$42.13 \text{ stake}
 \end{array}$$

35 A is 3, B is 7, C is 4

There are several pointers to the solution; for example, in the last vertical column A cannot be 5, 6, 7, 8 or 9.

36 C

C results in 4; all the others result in 5.

37 26

Starting at the top left-hand corner and taking every fourth number, there are four series: 1, 2, 3, 4, 5, 6 (bottom left-hand square in centre section), 7, 8, 9; 2, 3, 4, 5, 6, 7 (bottom right-hand square in centre section), 8, 9, 10; 9, 8, 7, 6 (top left-hand square in centre section), 5, 4, 3, 2, 1; and 1, 3, 5, 7 (top right-hand square in centre section), 9, 11, 13, 15, 17.

38 1020

Multiply the first two numbers in the right-hand column and place the result in the left-hand column; multiply the last two numbers in the right-hand column and place the result in the left-hand column.

39 A Either 239 cats killed 4,649 rats

B or 4,649 cats killed 239 rats. (A) is the most likely answer

40 6

The series is spaced incorrectly. When the spacing is correct it becomes: 2 4 8 16 32 64 128 256, which is an obvious doubling-up series.

41 20

X, C and M are the Roman numerals 10, 100 and 1000 respectively. 1000 divided by 100 is 10; 100 divided by 10 is also 10.

42 147

Add the first two numbers and place the total on the left inside the brackets, then place the difference between the other two numbers on the right inside the brackets.

43 5

The numbers represent the alphabetic position of the letters; 1 is A, 4 is D etc. the word becomes ADUMBRATE with the addition of the final E. (One meaning of this word is 'to indicate faintly'.)

44 A 6, 1, 8, 6, 1, 8

B 7, 5, 3, 7, 5, 3

C 2, 9, 4, 2, 9, 4

A beats B twice

B beats C twice

C beats A twice

Number Answers

45 Company C

Company A made £800,000,000

Company B made £850,000,000

Company C made £875,000,000

Company D made £700,000,000

46 Their ages equalled 72

These are the possible ages:

72 - 1 - 1	The door number	74
36 - 2 - 1		39
24 - 3 - 1		28
18 - 4 - 1		23
18 - 2 - 2		22
12 - 6 - 1		19
12 - 3 - 2		17
9 - 4 - 2		15
8 - 9 - 1		18
8 - 3 - 3		14
6 - 6 - 2		14
6 - 4 - 3		13

The census taker did not know their ages because there were 2 totals of 14.

The door number was 14, so the total was 14

8 - 3 - 3

6 - 6 - 2

There was an oldest girl so it must have been 8 - 3 - 3

47 £61

48 5040

Multiply each number by 2, 3, 4, 5 and 6 and (finally) 7.

49 X is 193; Y is 63

In the outer ring, starting with the lowest number, each number is doubled and 1 subtracted from the result. In the inner ring, starting with the lowest number, each number is doubled and 1 added to the result. (Alternatively, in the outer ring, the progression is 3, 6, 12, 24, 48 and 96; in the inner ring the progression is 2, 4, 8, 16, 32).

50 A is 4; B is 20; C is 5; D is 2

Add the numbers from top to bottom diagonally to the left of the bottom line for the first three positions on the bottom line, and to the right for the next three positions.

51 A is 2; B is 11; C is 5

The bottom line totals 19; the next line up totals 18; then 17. Hence 16, 15 and 14.

52 One of the pockets, though not the one it started from.

53 4

54 29

The odd numbers in A total 39; the even numbers in B total 40. From this combined total of 79 is subtracted 50 – the total of the prime numbers in C.

55 X is 2; Y is 8

56 No number plate begins with 0, so whether a number plate contains 1, 2, 3, or 4 digits Freddie has an advantage.

$$\begin{array}{r} \mathbf{57} \quad 9 \times 8 \times 7 \times 6 \times 5 \\ \quad \underline{1 \times 2 \times 3 \times 4 \times 5} \\ \quad = 3528 \end{array} \quad \begin{array}{r} 8 \times 7 \times 6 \times 5 \times 4 \times 3 \\ \underline{1 \times 2 \times 3 \times 4 \times 5 \times 6} \end{array}$$

58 17

59 D F B C E

The letters must be transposed in the same order as the numbers.

60 C

The digits add up to 19. In all the others the total is 18.

61 1416

In the first example, divide the left-hand number by 4 and the right-hand number by 5.

In the second example, divide the left-hand number by 6 and the right-hand number by 7.

Therefore, in the third line, divide the left-hand number by 8 (14) and the right-hand number by 9 (16).

62 18

All the others are divisible by 4

63 Oswald (lost £2401) is married
to Betty (won £2601)

Ernie (lost £529) is married
to Alice (won £729)

John (lost £25) is married
to Marjorie (won £225)