BlackStone TUTORS

Past Paper Answers & Explanations

St Paul's Girl School Maths Paper 1 2017

St Paul's Girls

1
623 - 467 = 156

2
286 / 13 = 22

3
11% * 32600 = 3586

4
1.023, 1.032, 1.2, 1.203, 1.23, 1.302, 1.32

5
47 minutes after 07:32 = 08:19

6
6.51, 7.49, 6.9

7
19,23,27
Add four each time

31,28,26
-7, -6, -5 etc

16,32,64
Double each time

8
68%
17 squares out of 25

9
5.7
4.5+2.5=7
1.1 7 = 7.7*
7.7 - 2 = 5.7

10
38
*75*3 = 225*
225/6 = 37.5
38 as we need to round up

11
11

30 degrees between each number
240 = 8 hours
Therefore moves back 8

12
7 + 18 = 25
25*3 = 75

13
12
46+14 = 60
60/5 = 12

14
14
*14*14 = 196*
*13*13 = 169*

15
84

16
15
⅛ = 3
She has ⅝
*5*3 = 15 left*

17
12m
36 = 2(x) + 2(2x)
36 = 6x
6=x
Length is 6

18
The fourth cube is correct

Section B

1
25
56/100 = 28/50 = 14/25
Not divisible any further

2
64
Perimeter is 100+100+60+60

= 320
320/5 = 64

3
£48
x- (3x/8) = 5x/8
*½ * (5x / 8) = 5x/16*
5x/16 = 15
*X = (16 * 15) /5*

4
4m
Carpet area is 12m2
Room area is therefore 20m2
Width must therefore be 4m

5
C is different, D the same, E is different

6
£6
He pays 120
*Therefore sells it back for 120 - (0.3 * 120) = 120 - 36 = 84*
Therefore Bill makes 6 on the final sale

7
a) 11am
24, 48, 72, 96, 120
30, 60 , 90 , 120
The trains must therefore both leave at the same time 120 mins (2 hours) later

b) 13:35
Add 45 mins to 3h40 → 4h25

18:00 - 4h 25

8
a) 7/24
b) 2500cm2
*50cm * 50cm*
c) 17500
*7 * 2500*

9
a) = 6667* 6667
b) 44444444448888888889
10 4s and 9 8s

c) 6666666667
9 6s

10
51

(*52-x) + (76-x) + x + 23 = 100*

→ 76 + 52 = 23 - 2x + x = 100

X = 151 - 100

11
a) 2127
One furlong is 220 yards
One chain is 22 yards
*220 * 3 + 2 * 22 + 5*
= 709
** 3 = 2127*

b) 7 chains, 3 yards, 1 feet

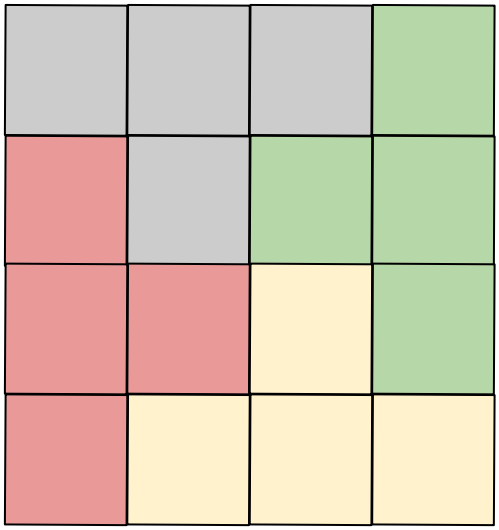
12
16
Container is 24cm3
*Two of the block shapes together make a cuboid shape of 3 * 1 * 1 = 3cm3*
Therefore 8 sets of 2 blocks
16 blocks

Section C

1

Medal	**France**	**Italy**	**Japan**	**Total**
Gold	7	8	9	24
Silver	16	9	6	31
Bronze	18	10	10	38
Total	41	27	25	93

2
T-tetrominos can form a 4a by 4b rectangle because they can be arranged as follows
:



3
a) 6
b) 36
c) 12
d) 3.6
e) 6x/10
f) 6x/y

4
a) 64, 256, 1024, 4096, 16384
None of the numbers could be in the sequence bar 65, 536
*Sequence continues as 16384*4 = 65536*

b) 6,12,24,48,96

64790 and 34921 can not be in the sequence as the sequence is 6 * 2^n
*49152 is 6*2^13, 24576 is 6 * 12^12, 12288 is 6 * 2^11*

5
a) 11

b) 22
c) 192
d) 2893

6

Rows	Columns	White tiles	Black tiles
4	5	14	6
4	6	16	8
8	12	36	60
3	7	16	5

*If rows is r and columns c, then Black tiles is (r-2) * (c-2) and white tiles is 2(r+c)-4*

b)
24

*24 is 3*8 or 4*6*

R-2 = 3 → r = 5

C - 2 = 8 → c = 10

White tiles is 26

*Therefore 4*6*

7
10

Options are:
1 face with one colour and the other five with the other colour
= 2
+
2 faces with one and the other four with the other
= 4 possibilities
+
3 faces with each colour
= 2 possibilities
+ All faces one colour
= 2
= 2+4+2+2 = 10
Whilst this may not seem like many, due to the cube's symmetry there are fewer options than it might appear at first, as it states in the latter part of the question.