



Answers and Notes

Question	Answer	Explanation
P1	C	
P2	D	
P3	B	
1	A	Are students able to trace a path and act on the outcomes? Only entrance A leads to the prize; all the others lead to dead ends.
2	C	Are students able to describe/recognise a path? Starting at 2, 0 is three "steps" down, 2 is three "steps" back up and 1 is a "step" to the left.
3	B	Are students able to recognise the results of multiplication in terms of what will produce odd and even answers without working them out? Only odd multiplied by odd gives an odd number for the answer, which in this case is $5 \times 5 = 25$. All the other multiplications involve even numbers and so will produce an even number for the answer.
4	D	The crayons are not all distributed and so not only must crayons that are shared out be accounted for (4×3) but so must the 9 remaining in the packet, which gives a total of 21 crayons in the packet.
5	E	V and W are the bottom and top planks respectively so we are looking only at the options A and E. the next plank up from V is Y, then X, then Z so we have VYXZW as the answer.
6	E	Go round an hour takes the time to half past four, then another 20 minutes moves the minute hand from 6 to 10.
7	A	The pattern increases by adding 3 matches each time. There are 10 matches in the fourth pattern and so in the sixth pattern another two sets of 3 matches will have been added giving 16 matches in the sixth pattern. Another way to think of it is the first pattern has one match in it and we add 3 for each subsequent pattern, so for the sixth pattern we would have 1 (for the first pattern) and then 5×3 for each of the 5 subsequent patterns to get us to the sixth pattern.
8	D	There are 6 obvious triangles, 2 of which are yellow, 2 blue and 2 purple. Each half of the rectangle gives another 2 triangles. Finally there are 3 triangles formed by the blue and purple triangles in the lower half, and the purple and yellow triangles and yellow and purple triangles in the upper half giving 11 triangles in all.
9	A	Half way through the lesson means that 20 minutes have elapsed. Adding this on to the start time of 9.15 means that the children saw the cat at 9.35.
10	B	This question relies on knowledge of repeated addition of the digits. Only the digit 5 reproduces itself after three of them are added together. So Y must be 5.
11	E	Factors of 15 and 1 and 15, 3 and 5, 6 and 9. Of these pairs of numbers only 6 and 9 multiply together to give 54, and the larger of these is 9.
12	D	Since there an equal number of 5p and 10p coins in the bag, the question is best tackled by thinking in units of 15p. How many 15p units are there in £1.80? There are 12 i.e. 12 units of 15p and so there must be 24 coins in the bag, 12 5p coins and 12 10p coins.
13	B	4 metres is 400 centimetres, and there are 11 35 centimetre lengths is the original length of string. The remaining piece of string is 15 centimetres, not enough to tie up another balloon.
14	B	Any number that divides by 2 ends in an even number, so we may discard all of the alternatives but for B 2023 and D 2025. But any number that divides by 5 must end in a 5 or a 0. So we can discard D 2025. That leaves only B 2023 which does not divide by 4 because it is an odd number and all multiples of 4 are even. A quick check also shows 2023 does not divide by 3. But if the question setters have been fair, and they have been, this last check is not necessary.
15	B	Each calculation needs to be worked out and compared to 27. B is the nearest giving an answer of 26%.
16	A	Knowledge of the properties of sides of rectangles and squares is necessary here. In a rectangle, opposite sides are equal so the total perimeter is $8 + 10 + 8 + 10 = 36$ cm. the sides of a square are equal so each side of the square has length $36 \div 4 = 9$ cm.
17	E	The first equation says, if I subtract 8 from a number and get 12, what number did I start with, and that has to be 20 by reversing the subtraction of 8. The second equation now says, if I subtract 20 from a number and get 12, what number did I start with, and that has to be 32 by reversing the subtraction of 20.
18	D	This is probably the hardest question on the paper and is perhaps best tackled by bar-modelling, which involves finding a unit to work with. Here the unit is what Samina picks, $\frac{1}{8}$ of the apples. Ravi picks half the apples, i.e. $\frac{4}{8}$ of the apples, and Toby picks $\frac{1}{8}$ (the same as Samina) and another 10. So altogether they pick $\frac{6}{8}$ of the apples and another 10, which must be $\frac{2}{8}$ of the apples. Hence $\frac{1}{8}$ is 5 apples and so they picked 40 (5×8) apples in total.
19	B	This is probably best done by drawing a Venn diagram, but tackling it in words; there are 22 in the class, 13 of which are girls, so there are 9 boys. 7 of the children wear glasses, 5 of which are girls, so 2 of the boys where glasses. Therefore 7 of the boys do not wear glasses.
20	C	If we think of the 15 cyclists spread out in order of starting, there are 14 spaces between them, each representing 10 seconds. Therefore there are 140 seconds between the first and last starter, 2 minutes and 20 seconds.