WMC 2020 Middle Primary Qualifying Round Solutions

1. **C** $16 \times 25 = 4 \times 4 \times 25 = 4 \times 25 = 400$

2. **C** The next pattern is formed by adding two balls to the previous one. So in the next pattern there will be $6 + 2 = 8$ balls.

3. **D** Trying different combinations will lead to 2 and 4 is only combination that works

4. **B** A standard ruler is 30 centimetres. An ice-cream stick is about a third of that. The other options are way too small or way to big.

5. **B** The trick is to look carefully from the girl's perspective.

6. **E** $12 + 6 = 18$ children have their favourite colour as brown. $4 + 5 = 9$ children have their favourite colour as green. Then $18 - 9 = 9$ more children have their favourite colour as brown rather than green.

7. **A** It is 15 minutes to 8.

8. **B** From the middle to the top Tariq climbed a total of $3 - 5 + 7 + 7 = 12$ rungs. So the ladder has 12 rungs from the middle to the stop, 12 rungs from the bottom to the middle and 1 middle rung and so it has $12 + 12 + 1 = 25$ rungs in total

9. **C** $WX = WZ - XZ = 22 - 15 = 7m$. $XY = WY - WX = 10 - 7 = 3m$.

10. **C** 2 balls are green, 6 balls are black and 7 balls are yellow. So $20 - 2 - 6 - 7 = 5$ balls are blue

11. **C** The largest three digit number that is be formed by three different digits is 987 and the smallest three digit number that is formed by three different digits is 102. Then $987 - 102 = 885$

12. **B** The fraction of students that chose a hotdog is more than a quarter but less than half. So if the fraction is $\frac{x}{19}$ then $\frac{19}{4} = 4.75 < x < \frac{19}{2} = 8.5$ and the only value here is 6.

13. **B** The side length of B is $6 - 4 = 2$ so the area of B is 4. The side length of A is $4 \times 3 - 2 = 10$ so the area of A is 100. So we can fit $100 \div 4 = 25$ $B's$ into A.

14. **D** The rectangles have a long side and a short side, which together add up to $9cm$. The sides of $ABCD$ are made up of a long side and a short side. Thus $ANCD$ is a $9cm$ by $9cm$ square.

15. **A** The first step is to see that the square must be 6 (if it's more the sum is too big and if it's less the sum can't be big enough). From there we can see the eleven triangles plus a circle is 77. Which is only possible for a circle being 0 and a triangle 7.