

## WMC 2019 Middle Primary Qualifying Round Solutions

1. **D** This is ordinary multiplication but one way to do is to write  $20 \times 19 = 20 \times 20 - 20 = 400 - 20 = 380$
2. **D** There were more sales on Thursday than any other day.
3. **B** From 5:20 pm to 6:00 pm there are 40 minutes and from 6:00 pm to 6:05 pm there are 5 minutes. Altogether there are  $40 + 5 = 45$  minutes.
4. **D** This is just ordinary addition.
5. **B**  $0,2019 - 0,02019 = \frac{2019}{100000} \times (10 - 1) = 2019 \times 9 \div 100000 = 0,18171$
6. **D** There are 9 learners in front of Thabo and there are 11 learners behind him. We must also count Thabo himself. In total there are  $11 + 9 + 1 = 21$  learners
7. **D** Approximate 7982413 to 8000000 and approximate 0,000246 to 0,00025. Then  $8000000 \times 0,00025 = 8 \times 25 \times 10 = 2000$ .
8. **C**  $\frac{30}{100} \times \frac{20}{100} \times \frac{50}{100} \times 7000 = 210$
9. **E** Suppose I am  $x$  years old and so my friend is  $x - 4$  years old. Then  $x + (x - 4) = 24 \implies 2x - 4 = 24 \implies 2x = 24 + 4 = 28 \therefore x = 28 \div 2 = 14$ .
10. **D**  $736 \times 32 + 726 \times 68 = 726 \times 100 = 72600$
11. **D** This is the only option that is smaller than  $\frac{3}{10}$ . Another way one may do this is to compare the first two options, and compare the smaller of these two with the third option and so on until the last option.
12. **D** One way to do this is to write out all the terms until the 83rd term. However a shorter way is to keep on adding the numbers up to  $n$  until you go beyond 83 and then you stop.
13. **E** For each handshake there are 14 choices for the first person and 13 choices for the second person. So there are  $14 \times 13$  choices. However since we can choose the same pair of people in two different ways, the number of handshakes is  $\frac{14 \times 13}{2} = 91$ .
14. **D** The pattern repeats after 5 digits. Now we must find the remainder when we divide 2019 by 5 which is 4. So the 2019th digit is the same as the 4th digit which is 3.
15. **C** The 45 who passed the first part minus the 20 who also passed the second part.