



**2019 Wits Mathematics Competition**  
**Qualifying Round**  
**Grades 4 and 5**  
**Time: 75 Minutes**

**Instructions**

This exam consists of 15 multiple choice questions. There is one correct answer to each question. There is no penalty for incorrect answers. The first 5 questions are each worth 3 points, the next 5 questions are each worth 4 points and the last 5 questions are each worth 5. The total number of points available is 60. The time limit on this exam is 75 minutes, calculators and geometric implements may NOT be used. If you are using the computer friendly answer sheet you should fill it in in BLACK pen (other colours do not scan well). Time may be given for filling in name, school and other personal details.

“It’s like asking why is Ludwig van Beethoven’s Ninth Symphony beautiful. If you don’t see why, someone can’t tell you. I know numbers are beautiful. If they aren’t beautiful, nothing is.” — Paul Erdos

**Full Name:** \_\_\_\_\_**School** \_\_\_\_\_**Division:** \_\_\_\_\_**Grade** \_\_\_\_\_**E-mail** \_\_\_\_\_**Middle Primary**

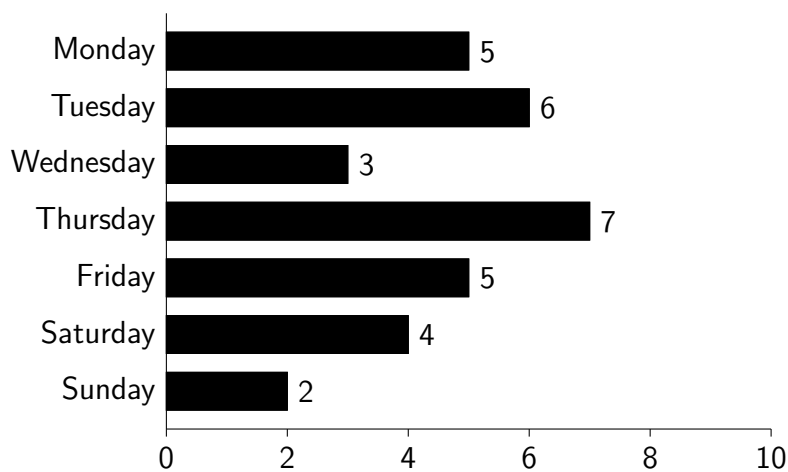
Circle your answers below					
1	A	B	C	D	E
2	A	B	C	D	E
3	A	B	C	D	E
4	A	B	C	D	E
5	A	B	C	D	E
6	A	B	C	D	E
7	A	B	C	D	E
8	A	B	C	D	E
9	A	B	C	D	E
10	A	B	C	D	E
11	A	B	C	D	E
12	A	B	C	D	E
13	A	B	C	D	E
14	A	B	C	D	E
15	A	B	C	D	E

## A. 3 point questions

1. Find the value of  $20 \times 19$ .

- A. 420
- B. 361
- C. 460
- D. 380
- E. 1920

2. Mr Smith has a sweet shop. The graph below shows his sales for each day of a week, from Monday to Sunday. On which day were sales highest?



- A. Monday
  - B. Tuesday
  - C. Wednesday
  - D. Thursday
  - E. Saturday
3. Nkosi played soccer with some friends. They started at 5:20 pm and finished at 6:05 pm. How long was their game?
- A. 1 hour and 35 minutes
  - B. 45 minutes
  - C. 1 hour and 45 minutes
  - D. 1 hour
  - E. 35 minutes

4. Find the value of  $1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 + 10$ .
- A. 28
  - B. 36
  - C. 45
  - D. 55
  - E. 66
5. Find the value of  $0,2019 - 0,02019$ .
- A. 0,18181
  - B. 0,18171
  - C. 0,199881
  - D. 0
  - E. 1,8901

### **B. 4 point questions**

6. Some students in a Grade five class line up. Thabo is  $10^{th}$  from the front and  $12^{th}$  from the back. How many students are in the class?
- A. 10
  - B. 12
  - C. 20
  - D. 21
  - E. 22
7. Which of the following numbers is closest to  $0,000246 \times 7982413$ ?
- A. 2
  - B. 20
  - C. 200
  - D. 2000
  - E. 20000

8. What is 30 percent of 20 percent of 50 percent of 7000?
- A. 21
  - B. 23
  - C. 210
  - D. 230
  - E. 2100
9. My friend is 4 years older than me. The sum of our ages is 24. How old am I?
- A. 8
  - B. 10
  - C. 12
  - D. 13
  - E. 14
10. Find  $726 \times 32 + 726 \times 68$ .
- A. 72804
  - B. 72920
  - C. 72856
  - D. 72600
  - E. 79400

### C. 5 point questions

11. Which fraction is the smallest?
- A.  $\frac{1}{3}$
  - B.  $\frac{3}{10}$
  - C.  $\frac{6}{9}$
  - D.  $\frac{2}{7}$
  - E.  $\frac{5}{13}$
12. Find the  $83^{\text{rd}}$  term in the sequence, 1,2,2,3,3,3,4,4,4,4,5,5,5,5,6,6,...
- Here the number 1 is repeated once, 2 twice, 3 three times. Later 10 is repeated ten times, 11 eleven times and so on.
- A. 10
  - B. 11
  - C. 12
  - D. 13
  - E. 14

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13. There are 14 people at a party. Every pair of people shakes hands exactly once. How many handshakes occur?
- A. 7
  - B. 14
  - C. 22
  - D. 53
  - E. 91
14. The fraction  $1/41 = 0,02439024390243902439\dots$ . Find the 2019<sup>th</sup> digit.
- A. 0
  - B. 2
  - C. 4
  - D. 3
  - E. 9
15. Eighty students take part in a mathematics exam, consisting of two parts. Forty five pass the first part of which twenty also pass the second part. Another fifteen students pass neither. How many students pass the second part but not the first?
- A. 15
  - B. 20
  - C. 25
  - D. 45
  - E. 70