



2019 Wits Mathematics Competition
Qualifying Round
Grades 6 and 7
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** _____**Upper 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

- Find the value of 20×19 .
 - 420
 - 361
 - 460
 - 380
 - 1920
- Nkosi played soccer with some friends. They started at 5:20 pm and finished at 6:05 pm. How long was their game?
 - 1 hour and 35 minutes
 - 45 minutes
 - 1 hour and 45 minutes
 - 1 hour
 - 35 minutes
- What is 30 percent of 20 percent of 50 percent of 7000?
 - 21
 - 23
 - 210
 - 230
 - 2100
- Find the value of $0,2019 - 0,02019$.
 - 0,18181
 - 0,18171
 - 0,199881
 - 0
 - 1,801
- Some learners in a Grade seven class line up. Thabo is 10^{th} from the front and 12^{th} from the back. How many students are in the class?
 - 10
 - 12
 - 20
 - 21
 - 22

B. 4 point questions

6. Which fraction is the smallest?

- A. $\frac{1}{3}$
- B. $\frac{3}{10}$
- C. $\frac{6}{9}$
- D. $\frac{2}{7}$
- E. $\frac{5}{13}$

7. Which of the following numbers is closest to $0,000246 \times 7982413$?

- A. 2
- B. 20
- C. 200
- D. 2000
- E. 20000

8. Find the area of a square with perimeter 12 cm.

- A. 3 cm^2
- B. 4 cm^2
- C. 6 cm^2
- D. 9 cm^2
- E. 36 cm^2

9. Find the 83^{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

10. Find $726 \times 32 + 726 \times 68$.

- A. 72804
- B. 72920
- C. 72856
- D. 72600
- E. 79400

C. 5 point questions

11. A school has 150 grade seven learners, 90 girls and 60 boys. One day 85% of the boys and 80% of the girls come to school. How many children are absent (i.e. how many children do not come to school on that day)?
- A. 22
 - B. 27
 - C. 75
 - D. 110
 - E. 123
12. 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
13. The fraction $1/41 = 0,02439024390243902439\dots$. Find the 2019th digit.
- A. 0
 - B. 2
 - C. 4
 - D. 3
 - E. 9
14. 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

-
15. If all four digit whole numbers are written down (that is all whole numbers between 1000 and 9999 inclusive), how many will contain at least one 5?
- A. 1000
 - B. 2158
 - C. 2598
 - D. 3168
 - E. 4000