



**2020 Wits Mathematics Competition
Qualifying Round
Grades 4 and 5**

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 points. 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.

“The really unusual day would be one where nothing unusual happens.”. — Persi Diaconis

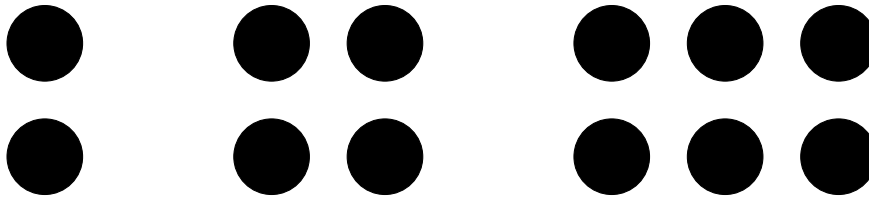
SHARP

A. 3 point questions

1. Find the value of 16×25 .

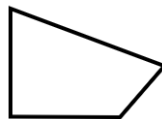
- A. 112
- B. 175
- C. 400
- D. 41
- E. 49

2. How many balls would be in the next (fourth) image?



- A. 12
- B. 16
- C. 8
- D. 4
- E. None of these

3. Consider the following shape:



Which two of the triangles below can be joined to make the shape above without rotating any of them?





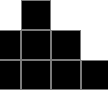


- A. 1 and 2
- B. 1 and 3
- C. 2 and 3
- D. 2 and 4
- E. 3 and 4

4. What is the most likely length of an ice cream on a stick?
- A. 10 millimetres
 - B. 10 centimeters
 - C. 10 meters
 - D. 10 kilometers
 - E. 10 light years
5. The girl is looking at a stack of 12 blocks.

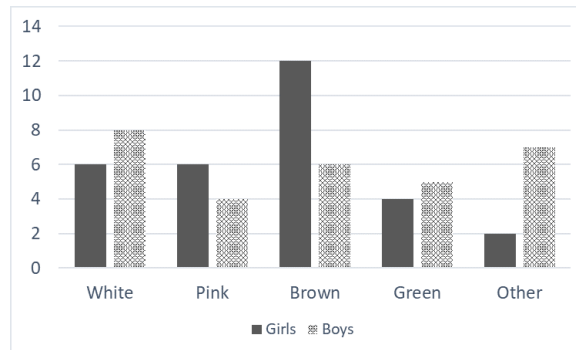


Select the view that the girl sees:

- A. 
- B. 
- C. 
- D. 
- E. 

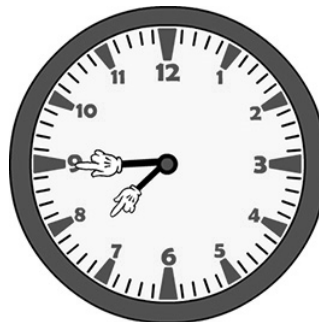
B. 4 point questions

6. 60 children were asked what their favourite colour was. The results are graphed below.



How many more children have brown as their favourite, rather than green?

- A. 8
 - B. 1
 - C. 6
 - D. 5
 - E. 9
7. Determine the digital time if the analogue clock looks like this in the morning:



- A. 07 : 45
- B. 08 : 59
- C. 07 : 30
- D. 08 : 45
- E. 09 : 38

8. Tariq was on the middle rung of a ladder. He went up 3 rungs, then down 5 rungs and then up 7 rungs where he rested. Later he climbed up the remaining 7 rungs on the ladder. How many rungs did the ladder have?

A. 9
B. 25
C. 21
D. 18
E. 17

9. In the figure $WY = 10m$, $XZ = 15m$ and $WZ = 22m$. Find the length of XY .



- A. $1m$
B. $2m$
C. $3m$
D. $4m$
E. $5m$
10. Tinyiko has 20 small balls of different colours: yellow, green, blue and black. 18 of the balls are not green, 6 are black, 13 are not yellow. How many blue balls does Tinyiko have?
- A. 8
B. 3
C. 5
D. 6
E. 4

C. 5 point questions

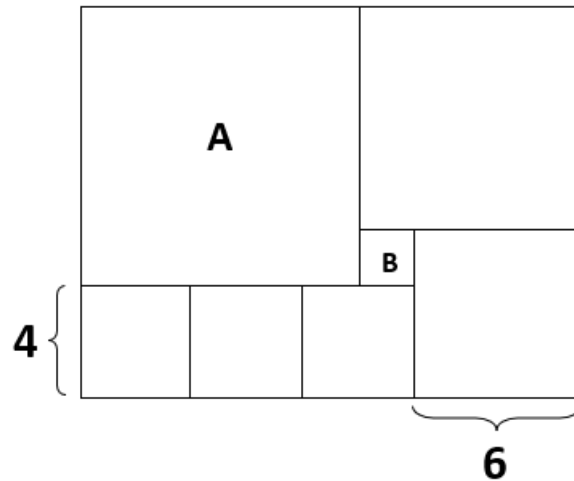
11. What is the difference between the biggest and smallest three-digit numbers, where each number is formed by different digits (numbers cannot start with a zero)?
- A. 100
 - B. 889
 - C. 885
 - D. 81
 - E. 999
12. The Grade 4 and Grade 5 children were asked to vote on what food they would like to eat. Their replies are represented in the pie chart below.



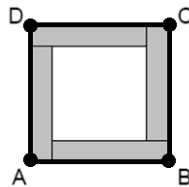
What fraction of children choose a hotdog?

- A. $\frac{4}{19}$
- B. $\frac{6}{19}$
- C. $\frac{9}{19}$
- D. $\frac{12}{19}$
- E. $\frac{17}{19}$

13. The figure shown consists of 7 squares with some lengths given. Square A is the biggest one and square B is the smallest one. How many squares of size equal to square B can square A be divided into?



- A. 30
 B. 25
 C. 20
 D. 5
 E. Impossible to determine
14. Square $ABCD$ consists of one inner white square and four identical grey rectangles. Each rectangle has a perimeter of 18cm . What is the area of square $ABCD$?



- A. 36cm^2
 B. 49cm^2
 C. 64cm^2
 D. 81cm^2
 E. 100cm^2

15. Each shape replaces a digit in this addition sum, where different shapes replace different values and same shape replaces the same value.

$$\begin{array}{r} + \square \square \square \\ + \square \square \circ \\ + \square \triangle \triangle \\ \hline \mathbf{2003} \end{array}$$

$\square + \circ = ?$

What is the sum of the “square” and the “circle”?

- A. 6
- B. 7
- C. 8
- D. 9
- E. 13