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**HIGH 5**  
**The Junior Mathematicians Challenge**  
**Qualifying Test**  
**23<sup>rd</sup> November 2016**



question no.	1	2	3	4	5	6	7	8	9	10
marks										

question no.	11	12	13	14	15	16	17	18	19	20
marks										

question no.	21	22	23
marks			

<b>SCORE OBTAINED</b>	
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## **Read the instructions carefully before the tests starts.**

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- This test is **1 hour** long.
- The use of calculator and protractor is not permitted during this test.
- Read each question carefully and attempt all questions.
- You do not need to answer the questions in order. Start from whichever question you want. If you cannot do one of the questions, go on to the next one.
- After attempting all the questions, go back and check your work.
- Any students caught cheating or copying will be disqualified.

**Do your best!**

## Section A

Tick (✓) the correct answer in each question.

Each question carries 2 points.

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1. How many **fifths** in  $4\frac{3}{5}$ ?

a. 3

b. 5

c. 20

d. 23

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2. Which number is **exactly half way** between 3 and 101?

a. 51

b. 52

c. 53

d. 54

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3. What is **€502 shared equally** among 5 friends?

a. €10•40

b. €10•40

c. €100•20

d. €100•40

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4. Which of the following is **always true**?

- a. When you divide an even number there is never a remainder.
  - b. When you divide by 3, the remainder is an odd number.
  - c. Multiples of 6 are exactly divisible by both 2 and 3.
  - d. Only numbers whose last digit is 5 are exactly divisible by 5.
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5. Which is the **smallest four digit number** that rounds to 5000 when rounded to the nearest thousand?

- a. 4050
  - b. 4500
  - c. 4550
  - d. 5050
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6.  $\frac{5}{6}$  of a pizza is shared equally between Fiona and Joanne.

**What fraction of the pizza** does each girl get?

- a.  $\frac{1}{2}$
- b.  $\frac{1}{3}$
- c.  $\frac{5}{12}$
- d.  $1\frac{1}{6}$

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7. What is the **difference** between **7000** and **21**?

a. 4900

b. 6790

c. 6979

d. 6989

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8. How many **minutes** in **half a day**?

a. 12 minutes

b. 600 minutes

c. 720 minutes

d. 1800 minutes

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9. A tin has **3.75 litres** paint when **one quarter** of it is empty.

How much paint is there in the same tin of paint when **one quarter** of the tin is full?

a. 0.93 litres

b. 1.25 litres

c. 1.75 litres

d. 3.25 litres

10. Tania slept from **quarter to 10** last night to **half past 7** this morning.  
How long did Tania sleep?

- a. 2 hours 15 minutes
- b. 3 hours 15 minutes
- c. 8 hours 45 minutes
- d. 9 hours 45 minutes



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11. Uncle Sam and Peter celebrate their birthday **on the same day**.  
When Peter celebrated his **12<sup>th</sup> birthday**, Uncle Sam celebrated his  
**24<sup>th</sup> birthday**.

How old will Uncle Sam be when Peter is **20 years old**?

- a. 32 years
- b. 36 years
- c. 40 years
- d. 44 years

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12. Which of the following is the same as **3 kg 60 g**?

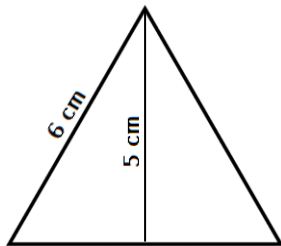
- a. 3•6 kg
- b. 3•06 kg
- c. 36 g
- d. 360 g

13. Daniel is **taller than** Ben.  
Daniel is **shorter than** Amanda.  
Ben is **taller than** Charlene.

Who is the **tallest**?

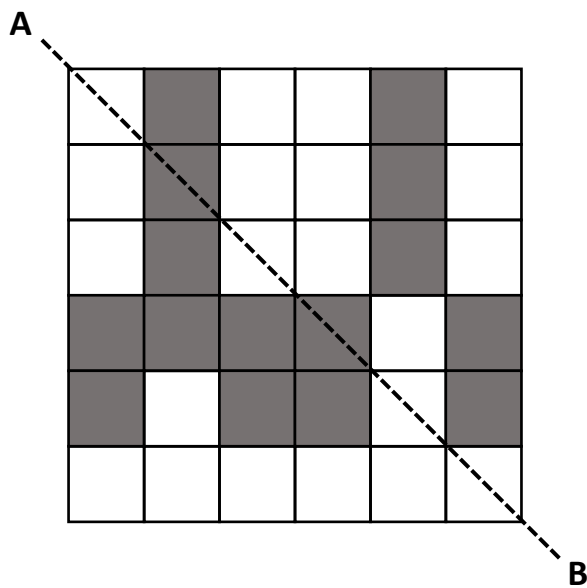
- a. Amanda
- b. Ben
- c. Charlene
- d. Daniel
- 

14. What is the **perimeter** of this **equilateral triangle** of sides 6 cm?



- a. 11 cm
- b. 15 cm
- c. 18 cm
- d. 23 cm
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15. What is the least number of squares that must be shaded so that line **AB** is the mirror line?



a. 7

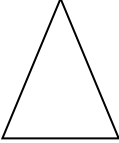
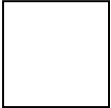
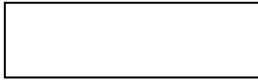
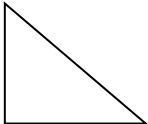
b. 8

c. 9

d. 10



16. A **square** piece of paper is **folded in half**.  
Then, it is **folded in half again**.  
How does it look like at the end?  
**Shade all the possible options.**

- a. 
- b. 
- c. 
- d. 

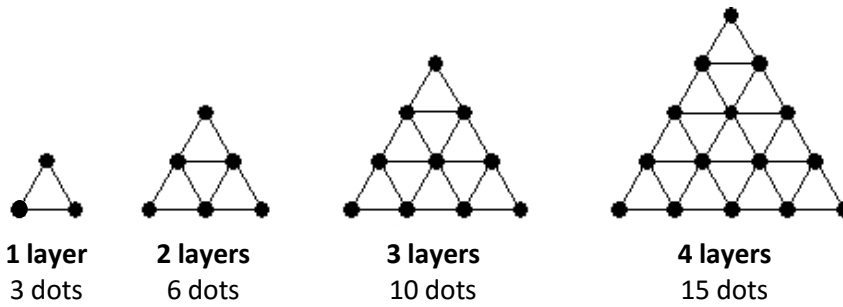
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17. Vanessa turned **135° clockwise** to face **East**.

In which direction was she facing before she made the turn?



- a. NE
- b. SE
- c. NW
- d. SW

18. Look carefully at the pattern below.  
How many **dots** will a pattern with **10 layers** have?



- a. 45 dots
- b. 55 dots
- c. 66 dots
- d. 100 dots

19. The table below shows the amounts of coins Jael has.

Type of coin	1-cent	2-cent	5-cent	10-cent	20-cent	50-cent	€1	€2
Number of coins	25	12	10	3	12	20	5	5

What is the **total value** of all the coins Jael has?

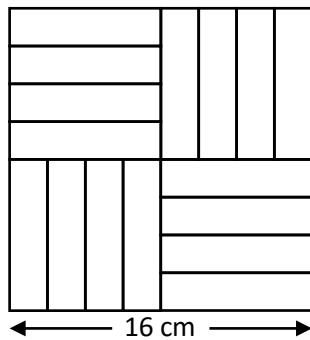
- a. €0.91
- b. €1.04
- c. €13.84
- d. €28.69

Section B

Show your working.

Each question carries 3 points.

20. The figure below is made up of 16 equal rectangles.



Work out the **area** of one rectangle?

$\text{cm}^2$
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21. This is a Magic Square.

The **total of each row**, the **total of each column** and the **total of each diagonal** are equal to each other.

Fill in the missing numbers.

16			13
5	10	11	8
4	15	14	1

22. What is the largest possible integer less than 100 that is divisible by 6 and 5?

The integer is \_\_\_\_\_ .

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23. The Balloon Man has some balloons to give to the children at a birthday party.

If he gives 4 balloons to each child, he will have 35 balloons left over.

If he gives 6 balloons to each child, he will have 11 balloons left over.

How many children are there are the party?

children

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End of test