



Conquesta 2019



(International Multiple Choice Primary School Olympiads – Est. 1998)
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Mathematics 2 – Grade 9

Welcome to your Conquesta Olympiad. When you have decided which of the answers is correct, scratch out the letter in the matching square on your answer sheet. Example:- If the answer to question 4 is c, then scratch out the letter c in the square containing c next to the number 4 (see example 1 below). If you've made a mistake and b should have been the answer, neatly cross out the mistake and then scratch out b (see example 2 below).

Example 1:-

4.	a	b	c	d
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Example 2:-

4.	a	b	c	d
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Useful tip:- When you have number sentences using different operations, apply the rule of **BODMAS**, which is the order of operations:- Firstly, calculate whatever is in **B**rackets, then **O**ther (of, square roots, power of, etc), then **D**ivision and **M**ultiplication (from left to right as they rank equally), and lastly, **A**ddition and **S**ubtraction (also from left to right).

Squared numbers are numbers multiplied by themselves, e.g., $4 \times 4 = 16$. This can also be written as 4 to the power of 2, e.g., $4^2 = 16$. So, 4 squared is 16; and the square root of $16 = 4$. The little 2 is called an exponent. The **square root** symbol is $\sqrt{\quad}$.

Cubed numbers are numbers multiplied three times, e.g., $4 \times 4 \times 4 = 64$. This can also be written as 4 to the power of 3, e.g., $4^3 = 64$. So, 4 cubed is 64; and the cubed root of $64 = 4$. The **cube root** symbol is $\sqrt[3]{\quad}$.

When we square a negative number, we get a positive result, e.g., $(-5)^2$ is worked out like this: $(-5) \times (-5) = 25$. This is the same result as $5^2: 5 \times 5 = 25$.

The **exponent** of a number says how many times to use the number in a **multiplication**. If the exponent is 1, then the number remains the same, e.g., $9^1 = 9$. If the exponent is 0, then you get 1, e.g., $9^0 = 1$

A **negative exponent** means how many times to **divide one** by a number, e.g., $8^{-1} = 1 \div 8 = 0,125$. You can have many divides: e.g., $5^{-3} = 1 \div 5 \div 5 \div 5 = 0,008$.

It is easier to start with '1' and then multiply or divide as many times as the exponent says, then you will get the right answer, for example:

Example : Powers of 5		
	.. etc..	
5^2	$1 \times 5 \times 5$	25
5^1	1×5	5
5^0	1	1
5^{-1}	$1 \div 5$	0,2 or $\frac{1}{5}$
5^{-2}	$1 \div 5 \div 5$	0,04
	.. etc..	

↑
5x Larger

5x Smaller
↓

1. The highest common factor of 24 and 18 is
 (a) 6 (b) 72 (c) 12 (d) 48

2. What is the value of x that will make $\frac{4+3x}{5}$ a prime number?
 (a) 1 (b) 4 (c) 3 (d) 7
 (A prime number is a whole number that is divisible by one and itself.)

3. The distance Sam travels during the holidays is 1 120 km. This is equivalent to
 (a) 112 000 m (b) 11 200 m
 (c) 1 120 m (d) 1 120 000 m

4. Esther started her own business selling cup-cakes. She took 155 cup-cakes to the school fete. 4 were stolen and 12 were left at the end of the day. If Esther charged R15,75 for each cup-cake, how much money did she make?
 (a) R2 378,25 (b) R2 441,25
 (c) R2 189,25 (d) R2 252,25

5. How many prime numbers are there between 10 and 40?
 (a) 15 (b) 17 (c) 8 (d) 21

6. Simplify:-
 $\sqrt{36x^2y^6} = \dots\dots$
 (a) $6y^4$ (b) $12xy^3$ (c) $18xy^3$ (d) $6xy^3$

7. Which of these is a rational number?
 (a) $\frac{22}{7}$ (b) 3,141 592 654 (c) $\sqrt[3]{2}$ (d) π

Rational numbers are the quotient of any two integers where the denominator may not be zero.

8. At school, there are 900 learners. If 25% of the learners are boys, how many girls are there at the school?
 (a) 675 (b) 450 (c) 225 (d) 220

9. Simplify:-
 $2\frac{2}{5} \times 5\frac{2}{5}$
 (a) $12\frac{96}{25}$ (b) $12\frac{4}{5}$ (c) $12\frac{1}{5}$ (d) $12\frac{24}{25}$

Mixed numbers must be converted to improper fractions before multiplying. Multiply the two numerators and two denominators. Now convert back to a mixed number.