DUR	ATION: 90 minut	tes		© Copyrigl	ht Protec	cted				Page 1
		NOUTIONS COURIER: 105	ternational Mu 5 Krantzview R Tel: (031) 764 ail: conquest@	Itiple Choic oad, Kloof 3 I-1972 * Fi iafrica.com	e Primar 3610. / F ax: (086 * Webs	y School (Post: P O E) 637-7808 site: www.c	Dlympiads fox 99, Kl or (031)	5 – <i>Est. 1</i> 9 oof 3640, 764-0074 aolympiac	998) South Africa. 1 <u>Is.com</u>	
		I	viathem	atics	1 –	Grad	e 8			Cita
Welco the m squar neatly	ome to your Cond natching square o re containing c ne y cross out the m	questa Olympiad. n your answer sh ext to the number 4 istake and then so	When you eet. Examp 4 (see example cratch out b	have de ble:- If the <i>1 below</i>). (see exam	cided w e answ If you' ple 2 bei	which of /er to qu ve made /ow).	the ans estion 4 a mista	wers is is c, th ke and	correct, scr len scratch o b should ha	atch out the letter in but the letter c in the ve been the answer,
	Example 1	4. a I	b 🕭 (k	Exam	ple 2:-	4.	a 🗊	* 🗶 d	
Usefu	l tip:– When you h	nave number senter	nces using dif	fferent	3.	What i	s the h	ighest	common fa	ctor of 63 and 54?
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 op they rook operating), and lepth. A ddition and						(a) 9		(b)	6	
						(c) 21		(d)	18	
Subtra	action (also from let	ft to right).	asliy, Auuilio	n anu		N - 4 - 12		0.000		
Sauar	rod numbors are n	numbers multiplied t	by themselve	5 A A	4.	Theref	ore, he	3 360 a r rate p	er minute i	nours. S
$x 4 = 16$. This can also be written as $\frac{4}{10}$ to the power of 2', $\frac{4}{10}$						(a) 56 a	apples.	(b)	420 apples.	
<u>the second power</u> ' or simply ' <u>4 squared</u> ', e.g., $4^2 = 16$. So, 4 squared is 16; and the square root of $16 = 4$. The little 2 is called					(c) 37 a	apples.	(d)	7 apples.		
an exponent. The square root symbol is $$.						(-)		()		
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 : $5 \times 5 = 25$.					5.	A farmer reaped 6 000 bags of maize last year. If his crop is 20% worse this year, how many bags will he reap?				
The Laws of Exponents The exponent of a number says how many times to use the number in a <u>multiplication</u> . 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., $9^0 = 1$. (Exponents are also called powers or indices .) A negative exponent means how many times to <u>divide</u> 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						(a) 5 8	80	(b)	5 980	
						(c) 4 8	(c) 4 800		1 200	
					6.	6. A father agreed to share out his land to his sons in the following proportions: ${}^{3}/_{8}$ to Thabiso, ${}^{2}/_{5}$ to Andile and the rest to Linda. What is the ratio that his land is shared out?				
						(a) $3:2:1$ (b) $6:4:10$				
exam	ple:					(0) 13.	10.9	(u)	9.0.12	
	Example : Powers of 5			7.	Janice	has a	bank ba	alance of -F	R150. What will	
5 ²	1 x 5 x 5	5 25				withdr	awal of	R560?		
5 ⁰	1 1	5	5x Larger			WI CITAT				
-	1	1	5v Smaller	r		(a) R2	090	(b)	-R1 790	
5 ⁻¹	1 ÷ 5 1 ÷ 5 ÷ 5	$ \begin{array}{c c} 1 \\ 0,2 \text{ or } \frac{1}{5} \\ 0.04 \end{array} $	- 5x Smallei	r		(a) R2 (c) R1	090 790	(b) (d)	-R1 790 -R2 090	
5 ⁻¹ 5 ⁻²	1 ÷ 5 1 ÷ 5 ÷ 5 etc.	$ \begin{array}{c} 1 \\ 0,2 \text{ or } \frac{1}{5} \\ 5 \\ 0,04 \\ . \end{array} $	5x Smaller	r		(a) R2 (c) R1	090 790	(b) (d)	-R1 790 -R2 090	
5 ⁻¹ 5 ⁻²	1 ÷ 5 1 ÷ 5 ÷ 5 etc.	1 0,2 or ¹ / ₅ 0,04 ke 1/n (or, e.g., 1/3)	5x Smaller	r ke the	8.	(a) R2 (c) R1 Calcul	090 790 ate:-	(b) (d)	-R1 790 -R2 090	(BODMAS Rule)
5 ⁻¹ 5 ⁻² A frac nth (or	<i>1 ÷ 5</i> <i>1 ÷ 5 ÷ 5</i> <i> etc.</i> <i>etional exponent lin</i> <i>r 3rd) root, e.g., x^{1/n}</i>	$\frac{1}{0,2 \text{ or } \frac{1}{5}}$ $\frac{0,2 \text{ or } \frac{1}{5}}{0,04}$ $\frac{1}{5}$ $\frac{1}{$	5x Smaller \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow	r ke the	8.	(a) R2 (c) R1 Calcul	090 790 ate:-	(b) (d) (-36)	-R1 790 -R2 090 + (-12) ÷	(BODMAS Rule) (-3)
5 ⁻¹ 5 ⁻² A frac nth (or	$\begin{array}{c} 1 \div 5 \\ 1 \div 5 \div 5 \\ \dots etc. \end{array}$	$\frac{1}{0,2 \text{ or } \frac{1}{5}}$ 0,04 ke 1/n (or, e.g., 1/3) are 72 sweets be	5x Smaller 3x Smaller 3x).	r ke the n in the	8.	(a) R2 (c) R1 Calcul (a) -40	090 790 ate:-	(b) (d) (-36) b) -32	-R1 790 -R2 090 + (-12) ÷ (c) 16	(BODMAS Rule) (-3) (d) -16
5-1 5-2 A frac nth (or 1 .	Two friends she ratio of 1:3. If S sweets did she	$\frac{1}{0,2 \text{ or } \frac{1}{5}}$ $\frac{0,2 \text{ or } \frac{1}{5}}{0,04}$ $\frac{1}{5}$ \frac	5x Smaller 3x Smaller 3x). $3\sqrt{x}$). etween ther post, how matrix	ke the n in the any	8.	(a) R2 (c) R1 Calcul (a) -40 Calcul	090 790 ate:- (ate:-	(b) (d) (-36) b) -32	-R1 790 -R2 090 + (-12) ÷ (c) 16	(BODMAS Rule) (-3) (d) -16
$\frac{5}{5^2}$ A frac nth (or	Two friends she ratio of 1:3. If S sweets did she (a) 24	$\frac{1}{0,2 \text{ or } \frac{1}{5}}$ $\frac{0,2 \text{ or } \frac{1}{5}}{5}$ $\frac{1}$	5x Smaller 3x Smaller $\sqrt{3x}$). Etween ther post, how matrix	ke the n in the any	8.	(a) R2 (c) R1 Calcul (a) -40 Calcul	090 790 ate:- (ate:-	(b) (d) (-36) b) -32 $\sqrt{36}$ +	-R1 790 -R2 090 + (-12) ÷ (c) 16 - $(\sqrt[3]{64} \times (-$	(BODMAS Rule) (-3) (d) -16
5-1 5-2 A frac nth (or 1.	Two friends sha ratio of 1:3. If \$ sweets did she (a) 24 (c) 18	$\frac{1}{0,2 \text{ or } \frac{1}{5}}$ $\frac{0,2 \text{ or } \frac{1}{5}}{5}$ $\frac{0,04}{5}$ $\frac{1}{5}$ $\frac{1}{5} = \sqrt[n]{x} \text{ (or } x^{1/3} = \frac{1}{5}$ are 72 sweets be Sally took the model of the mo	5x Smaller 3x Smaller $\sqrt{3x}$). etween ther post, how matrix	r ke the n in the any	8. 9.	(a) R2 (c) R1 Calcul (a) -40 Calcul (a) 14	090 790 ate:- (ate:-	(b) (d) (-36) b) -32 $\sqrt{36}$ + b) 2	-R1 790 -R2 090 + (-12) \div (c) 16 - $(\sqrt[3]{64} \times (-$ (c) -20	(BODMAS Rule) (-3) (d) -16 -2)) (d) -2
5-1 5-2 nth (or 1. 2.	$1 \div 5$ $1 \div 5 \div 5$ \dots etc.ctional exponent line $r 3^{rd}$) root, e.g., $x^{1/n}$ Two friends sharatio of 1:3. If Sratio of 1:3. If Ssweets did she(a) 24(c) 18A sports shop pTheir mark-up iof the hockey s	$\frac{1}{0,2 \text{ or } \frac{1}{5}}$ $\frac{0,2 \text{ or } \frac{1}{5}}{5}$ $\frac{0,04}{5}$ $\frac{1}{5} = \sqrt[n]{x} \text{ (or } x^{1/3} = \frac{1}{5}$ $\frac{1}{5} = \sqrt[n]{x} \text{ (or } x^{1/3} = \frac{1}{5}$ $\frac{1}{5} = \sqrt[n]{x} \text{ (or } x^{1/3} = \frac{1}{5}$ $\frac{1}{5} = \sqrt[n]{x} \text{ (or } x^{1/3} = \frac{1}{5}$ $\frac{1}{5} = \sqrt[n]{x} \text{ (or } x^{1/3} = \frac{1}{5}$ $\frac{1}{5} = \sqrt[n]{x} \text{ (or } x^{1/3} = \frac{1}{5}$ $\frac{1}{5} = \sqrt[n]{x} \text{ (or } x^{1/3} = \frac{1}{5}$ $\frac{1}{5} = \sqrt[n]{x} \text{ (or } x^{1/3} = \frac{1}{5}$	5x Smaller 3x Smaller $3\sqrt{x}$). The tween the roost, how matching bockey sticks the selling	r ke the n in the any k. g price	8. 9. 10.	(a) R2 (c) R1 Calcul (a) -40 Calcul (a) 14 The Gr This m	090 790 ate:- (ate:- (reat Wa beans th	(b) (d) (-36) (b) -32 $\sqrt{36}$ + (b) 2 (ll of Cr nat its I	-R1 790 -R2 090 + (-12) ÷ (c) 16 - $(\sqrt[3]{64} \times (-(c) -20))$ hina is 8,85 ength is	(BODMAS Rule) (-3) (d) -16 -2)) (d) -2 x 10⁶ m long.
5-1 5-2 <i>A</i> frac <i>nth</i> (ol 1 . 2 .	Two friends sha ratio of 1:3. If S sweets did she (a) 24 (c) 18 A sports shop p Their mark-up i of the hockey s (a) R529,20	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	5x Smaller 3x Smaller \sqrt{x}). The tween the rost, how mathematical structures of the selling structure struc	r ke the n in the any k. g price	8. 9. 10.	(a) R2 (c) R1 Calcul (a) -40 Calcul (a) 14 The Gi This m (a) 88	090 790 ate:- (ate:- (reat Wa beans the 500 km	(b) (d) (-36) (b) -32 $\sqrt{36} +$ (b) 2 (c) (c) (b) (c) (c)	-R1 790 -R2 090 + (-12) ÷ (c) 16 - $(\sqrt[3]{64} \times (-(c) -20))$ hina is 8,85 ength is 8 850 km	(BODMAS Rule) (-3) (d) -16 (d) -2 (d) -2 x 10⁶ m long.
5-1 5-2 nth (or 1.	$1 \div 5$ $1 \div 5 \div 5$ $r etc.$ ctional exponent lineratio of 1:3. If Ssweets did she(a) 24(c) 18A sports shop pTheir mark-up iof the hockey s(a) R529,20(c) R1 033,20	$\frac{1}{0,2 \text{ or } \frac{1}{5}}$ $\frac{0,2 \text{ or } \frac{1}{5}}{5}$ $\frac{0,04}{5}$ $\frac{1}{5} = \sqrt[n]{x} \text{ (or } x^{1/3} = \frac{1}{5}$ \frac	5x Smaller 5x Smaller 1 means to tan $\sqrt[3]{x}$. etween ther post, how mathematical hockey sticks the selling	ke the n in the any	8. 9. 10.	(a) R2 (c) R1 Calcul (a) -40 Calcul (a) 14 The Gi This m (a) 88 (c) 885	090 790 ate:- (ate:- (reat Wa beans th 500 km 5 km	(b) (d) (-36) (b) -32 $\sqrt{36}$ + (b) 2 (c) (c) (d)	-R1 790 -R2 090 + $(-12) \div$ (c) 16 - $(\sqrt[3]{64} \times (-(c)) - 20)$ hina is 8,85 ength is 8 850 km 8 850 000 k	(BODMAS Rule) (-3) (d) -16 (d) -2 (d) -2 x 10⁶ m long.