IES KARLSTAD
YEAR 9 MATH
NUMBER SKILLS REVIEW

NAME: _____

Basic Operations

Calculate.

3,456 + 12,1=	16,9999 + 9,9=	16,7 + 19,99 + 245,987=
9,4 - 3,78=	121,456 - 5,7	1000,45 - 3,5 -189,732 =
0,3 x 0,12=	14,56 x 19,3 =	0,5 x 102,5 =
$\frac{6015}{6}=$	$\frac{7014}{16}=$	$\frac{1875}{0,8}=$

Operations with Integers

Calculate.

(-5) + (-3) =	4 + (-9) =	(-2) - (-8) =	5 - 9 =
(-16) x 2 =	(-3) x (-9) =	(-15) ÷(-3) =	88 ÷(-8) =
(-2) x 5 x (-3) =		50 ÷ 5 ÷ (-5) =	

Order of Operations

Calculate.

$5 + 2\,x\,3$	$\dfrac{-6 + 6x5}{-2 - (-4)}$
$8 - 4 \cdot \left[3 - \{3^2 + 4\}\right]$	$\left[\{(-90) \div (-5)\}^{3} - (-10)\right] \cdot (-11) + (-11)$

Exponents

Write in expanded form.

6^7	$(-4)^5$	-2^5

Write in exponent form.

4 x 4 x 4 x 4 x 4=	(-3) x (-3) x (-3)=	-2 x 2 x 2 x 2=

Calculate.

4^4	$(-2)^5$	-3^6

Simplify. Answer using positive exponents only.

$8^4 x\ 8^5 =$	$\dfrac{x^3}{x^8}$	$\left(\dfrac{x^6 y^7}{x^{-2} y^3}\right)^2$

Scientific Notation

Write in scientific notation.

453000000000	8010000000	0,000000000000000908

Write in standard form.

$7{,}8 \times 10^{8}$	$7{,}09 \times 10^{2}$	$3{,}9 \times 10^{-7}$

Calculate, answer in scientific notation.

$6{,}4 \times 10^{8} \times 1{,}9 \times 10^{-2}$	$\dfrac{2{,}4 \times 10^{-6}}{2 \times 10^{5}}$	$\dfrac{6{,}7 \times 10^{8} - 1{,}7 \times 10}{9 \times 10^{4} + 1{,}1 \times 10^{5}}$
$9{,}4 \times 10^{7} + 1{,}23 \times 10^{5}$	$5{,}76 \times 10^{-7} - 1{,}3 \times 10^{-9}$	

Square Roots

Calculate.

$\sqrt{4}=$	$\sqrt{49}=$	$\sqrt{144}=$

Estimate the square root to one decimal place.

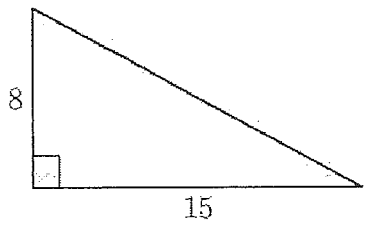
$\sqrt{11}=$	$\sqrt{40}=$	$\sqrt{137}=$

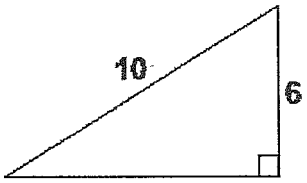
Simplify.

$\sqrt{27}=$	$\sqrt{80}=$	$\sqrt{396a^2b}$

Pythagoras

Find the missing side length.





Mixed Problems

Put the following numbers on the number line below.

$5{,}5\ x\ 10^{-2}$ $\sqrt{11}$ $2\sqrt{3}$ 2^{-2} $1{,}5\ x\ 0{,}5$

Each side of a chess board is 40cm. What is the length of its diagonal?

You have a garden with measurements 7m by 7m and you want to find out the length of the diagonal in order to split the garden in half. What is the length of the diagonal? Answer in BOTH an approximation to one decimal and in simplified form.

Evaluate. Answer in scientific notation.

$$\frac{b}{c} \cdot a$$

when $a = 1{,}5\ x\ 10^{7}$, $b = 4{,}2\ x\ 10^{-3}$ and $c = 2{,}0\ x\ 10^{9}$

Write $(0{,}001)^{20}$ in scientific notation.

Simplify.

$$\frac{5(a^4b^{-3})^2}{10a^3b^7}$$

In the table below you can see the temperatures in ∘ $C$for the Nordic capital cities on a March day. What is the difference (in degrees) between the two cities with the greatest temperature difference?

City	Temp.
Helsinki	−8
Copenhagen	5
Oslo	0
Reykjavik	6
Stockholm	−3

How many minutes is 0.75 h?

Which of the following calculations gives the greatest value? Circle your answer.

$\frac{5}{0.2}$ $\frac{5}{0.6}$ $\frac{0.2}{5}$ $5 \cdot 0.2$ $5 \cdot 0.6$

Calculate

$$\frac{102 + 102 + 102 + 102 + 102}{102 + 102}$$

Write a number in the box so that the equation will be true.

$$\frac{35}{0.1} = 35 \cdot \square$$

Write one number that is between 0,09 and 0,1

How many million is $7\ x\ 10^8$?

Make an estimate and circle the best alternative for this number calculation $0{,}27 \cdot 0{,}89$.

0,027 0,24 0,33 2,4 2,7

a) What should x be in this equation?

$$4 \cdot 10^{-2} \cdot 2{,}5 \cdot 10^{10} = 10^x$$

b) Write your answer in scientific notation.