M9

1.4 BEDMAS with Integers and Decimals

	B rackets	
	E x ponents	
M or D	**D** ivision **M** ultiplication	} done left to right
S or A	**A** ddition **S** ubstraction	} done left to right

New: There are many different types of brackets.

( ) = parentheses ("soft = round" brackets)

[ ] = boxed brackets

< > = broken brackets

{ } = braces ("curly brackets")

Each type of brackets has its special uses. Sometimes (but not always) several types of brackets can be used in a single question to indicate the correct sequence of steps.

! If a question contains several sets of brackets, always solve from the inside out !

$\{[(5+3)\times 6]+20\}\div 4 =$ *is the same as:* $(((5+3)\times 6)+20)\div 4 =$

Note: Brackets around a single number are used to separate a negative number from operation symbols or to bring attention to the fact that a number is negative. You have to be very careful when removing those types of brackets. These brackets are not the same as the "B" in BEDMAS.

$\{[8\times 6]+20\}\div 4$

$\{48+20\}\div 4$

$68\div 4 \rightarrow 17$

Solve:

1. $(-5) + (3 + 5) \div 4 =$

$(-5) + 8 \div 4$

$(-5) + 2$

-3

2. $(3 + 5) \div (-4) + (-9) =$

$8 \div (-4) + (-9)$

$-2 + (-9) \rightarrow -2 - 9 = -11$

Remember, when solving questions with several operations and with negative numbers, it is very important to know what symbols stand for an operation and what symbols are indicating whether a number is positive or negative.

-4	Negative Four
$5+(-3)$ $5 - 3 = 2$	Five plus negative three or (Positive) Five minus three
$-7 + (-6)$ $-7 - 6 = -13$	Negative Seven plus Negative Six
$-7 + (-6 - 5)$ $-7 + (-11) \rightarrow -7 - 11$ -18	Negative Seven Plus brackets $\rightarrow$ Negative Six minus Five close brackets

$(-4)(7) = -28$	Negative four multiplied by seven or Negative four times seven
$-5 \times 6 + (-2)$ $-30 + (-2)$ $-30 - 2$ -32	Negative five times Six Plus negative two
$-(17 - 11) - (+12)$ $-6 - 12$ -18	Negative brackets Seventeen minus eleven close brackets minus twelve
$-7 + (-2 + 5)^2$ $-7 + 3^2$ $-7 + 9$ 2	Negative Seven plus braekets negative two plus Five close brackets raised to the power of Two Squared
$4 + (12 - 3)^2 - 71 \times 0$ $4 + 9^2 - 71 \times 0$ $4 + 9^2 - 0$ $4 + 81 = 85$	Four plus brackets twelve minus three close brackets Squared minus Seventy one times Zero

Recall: when applying BEDMAS to fractions, always apply it to the numerator and denominator separately. Only once you have a single number for the numerator and a single number for the denominator, reduce the fraction and/or express it as a mixed number.

Practice BEDMAS by showing the correct sequence of steps when solving the following:

1 LVL	$16 \div 4 + (5 + (-3)) =$ $16 \div 4 + 2$ $4 + 2 = \boxed{6}$
2 LVL	$\frac{(-5)(-6) + (-2)}{3 + 8 \div +2} =$ $\frac{30 + (-2)}{3+8 \div 2} = \frac{28}{3+4} = \frac{28}{7}$ $28 \div 7 = \boxed{4}$
3 LVL	$\frac{(-15) \div (-5) - (-2)}{3 + 8 \div (-2)} =$ $\frac{15 \div 5 - (-2)}{3+8 \div (-2)} = \frac{3 - (-2)}{3 + (-4)} = \frac{3+2}{3-4}$ $\frac{5}{-1} = \frac{-5}{1} = \boxed{-5}$

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LVL $\dfrac{5 \times (-8) + (2+5)^2}{(13 + (-8) + 1) \div 2^2} =$

$\dfrac{5 \times (-8) + 7^2}{(5+1) \div 2^2} = \dfrac{5 \times (-8) + 49}{(5+1) \div 4}$

$\dfrac{-40 + 49}{6 \div 4} = \dfrac{9}{\frac{6}{4}} = \dfrac{9}{1} \div \dfrac{6}{4}$

$= \dfrac{9}{1} \times \dfrac{4^2}{6_3} = \dfrac{9^3}{1} \times \dfrac{2}{3_1} = \dfrac{6}{1} = \boxed{6}$