

Integers – Lesson 7

Today we will continue work on adding, subtracting, multiplying and dividing integers. In the lesson we will include some examples where you have to carry out the operations in the right order and will then introduce the use of negative numbers in algebraic substitution.

Now try these examples: -

1) $-9 + 3$

2) $-9 + -3$

3) $9 + -3$

4) $-3 + 9$

5) $-9 - 3$

6) $-9 -- 3$

7) $9 -- 3$

8) $-3 - 9$

9) -9×3

10) -9×-3

11) 9×-3

12) -3×-9

13) $-9 \div 3$

14) $-9 \div -3$

15) $9 \div 3$

16) $9 \div -3$

17) $(-3)^2$

18) $(-9)^2$

19) -9^2

20) $(-3)^3$

In these examples you will need to carry out the operations in the correct order: -

21) $-2 \times -5 - -3 \times -3$

22) $-10 \div 2 + -12 \div 3$

23) $3 \times -4 + 5 \times -2$

24) $-12 \div -4 - -10 \div -2$

25) $-2 + -3 \times -3 - 4$

26) $10 - -12 \div 6 - 2 \times -3$

27) $-10 \times (-5 + 8)$

28) $-10 + (2 - 6)^2$

29) $(10 - 12)^2 + (10 - 15)^2$

In the past we have learnt how to evaluate a formula if we are told what each letter stands for but now we want to practise doing this with negative numbers.

Examples

$a = -2, b = -5$

$\begin{aligned} a + b \\ = -2 + -5 \\ = -7 \end{aligned}$	$\begin{aligned} 3a + 4b \\ = 3 \times -2 + 4 \times -5 \\ = -6 + -20 \\ = -26 \end{aligned}$	$\frac{4b}{a + 6} = \frac{4 \times -5}{-2 + 6} = \frac{-20}{4} = -5$
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Remember to: -

- Write out the formula
- Replace the letters with numbers (substitution)
- Do the operations in the correct order

Now try these examples: -

$c = -3$ and $d = -4$

30) $c + d$	31) $c - d$	32) $d - c$
33) $4c + 10$	34) $3d - 10$	35) $5d + 10$
36) $2c + 3d$	37) $3c - 4d$	38) $10c + 5d$
39) $\frac{10d}{c+8}$	40) $\frac{5d - 8}{c + d}$	41) $\frac{10c - 10}{2d + 3}$