

Day 1: Integers – Course Intro**Diagnostic: Integers**

Integers are all the whole numbers (0, 1, 2, 3, 4...) plus the negative values.

Therefore, integers are {...-3, -2, -1, 0, 1, 2, 3, ...}

**Integer Diagnostic – What Do You Know? Record your answers in the matching box below:**

Afterwards the teacher will read the solutions – so you can check your work.

1)  $8 + 3 = 11$

2)  $9 + (-6) = 3$

3)  $10 - 4 = 6$

4)  $12 - (-5) = 12 + 5 = 17$

5)  $6 \times 9 = 54$

6)  $8 \div (-4) = -2$

7)  $-5 + (-4) = -5 - 4 = -9$

8)  $-5 + 11 = 6$

9)  $7 - 12 = -5$

10)  $-7 - 2 = -9$

11)  $-7 \times 8 = -56$

12)  $24 \div 3 = 8$

13)  $13 + 8 = 21$

14)  $12 + (-15) = 12 - 15 = -3$

15)  $-2 - (-6) = -2 + 6 = 4$

16)  $8 - (-11) = 8 + 11 = 19$

17)  $-2 \times (-4) = 8$

18)  $-20 \div 4 = -5$

19)  $-4 + (-9) = -4 - 9 = -13$

20)  $-7 + 3 = -4$

21)  $-8 - (-5) = -8 + 5 = -3$

22)  $-4 - 6 = -10$

23)  $-6 \times 7 = -42$

24)  $18 \div 3 = 6$

25)  $-6 + (-2) = -6 - 2 = -8$

26)  $8 + (-3) = 8 - 3 = 5$

27)  $-9 - (-2) = -9 + 2 = -7$

28)  $7 - (-2) = 7 + 2 = 9$

29)  $-2 \times (-7) = 14$

30)  $8 \div (-2) = -4$

31)  $14 + 9 = 23$

32)  $-5 + 11 = 6$

33)  $11 - 18 = -7$

34)  $-11 - 6 = -17$

35)  $12 \times 5 = 60$

36)  $-45 \div 9 = -5$

37)  $19 + 8 = 27$

38)  $7 + (-13) = -6$

39)  $17 - 4 = 13$

40)  $-3 - 10 = -13$

41)  $-11 \times 7 = -77$

42)  $-54 \div (-6) = 9$

43)  $-5 + (-3) = -5 - 3 = -8$

44)  $-17 + 9 = -8$

45)  $-7 - (-15) = -7 + 15 = 8$

46)  $5 - (-7) = 5 + 7 = 12$

47)  $(6)(-9) = -54$

48)  $\frac{-56}{-7} = 8$

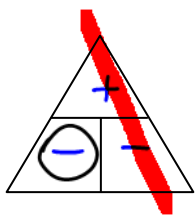
1) 11	2) 3	3) 6	4) 17	5) 54	6) -2
7) -9	8) 6	9) -5	10) -9	11) -56	12) 8
13) 21	14) -3	15) 4	16) 19	17) 8	18) -5
19) -13	20) -4	21) -3	22) -10	23) -42	24) 6
25) -8	26) 5	27) -7	28) 9	29) 14	30) -4
31) 23	32) 107	33) -7	34) -17	35) 60	36) -5
37) 27	38) -6	39) 13	40) -13	41) -77	42) 9
43) -8	44) -8	45) 8	46) 12	47) -54	48) 8

**Lesson: Integers**

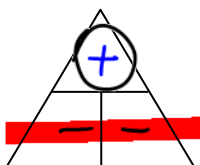
Diagnostic Results:  
 Each column represents a particular type of question.  
 Which column did you have the most difficulty with?  
 1 – Adding numbers with the same sign  
 2 – Adding numbers with opposite signs  
 3 – Subtracting numbers with the same sign  
 4 – Subtracting numbers with opposite signs  
 5 – Multiplying  
 6 - Dividing

**A) MULTIPLYING AND DIVIDING INTEGERS**

It is quite easy to multiply or divide integers.



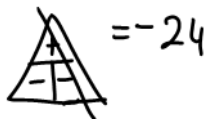
Ex1.  $(+8) \times (-4) = -32$



Ex2.  $\frac{(-6)}{(-2)} = +3$

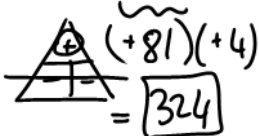
Let's Try Some:

a.  $(-6) \times (+4) =$



$= -24$

b.  $(-9)(-9)(+4) =$



$(+81)(+4) = \boxed{324}$

c.  $(-1) \div (+4) =$



$= -\frac{1}{4}$   
or  
 $= -0.25$

d.  $(-9) \div (-9) =$



$= \boxed{+1}$

e.  $\frac{-21}{-7} = +3$



\* Integers and exponents:

f.  $(-1)^3 = (-1)(-1)(-1) = -1$



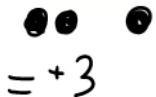
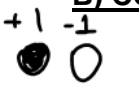
g.  $(-5)^2(+4) = (-5)(-5)(4) = (+25)(4) = \boxed{100}$

h.  $-5^2(+4) = -(5)(5)(+4) = (-25)(+4) = \boxed{-100}$



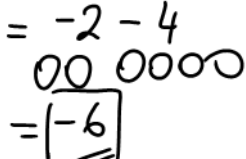
**B) COMBINING INTEGERS (ADDING AND SUBTRACTING)**

a.  $(+2) + (+1)$



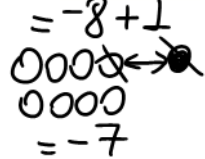
$= +3$

b.  $(-2) + (-4)$



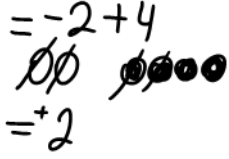
$= \boxed{-6}$

c.  $(-8) + (+1)$



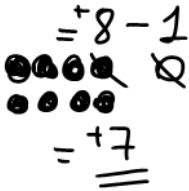
$= -7$

d.  $(-2) + (+4)$



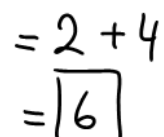
$= +2$

e.  $(+8) - (+1)$



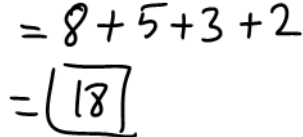
$= +7$

f.  $(2) - (-4)$



$= \boxed{6}$

g.  $(+8) - (-5) + (+3) - (-2)$



$= \boxed{18}$