

## Integer Rules Review

### Adding:

Think about tiles or money or use a number line!

- Adding two positives make a bigger positive (white tiles + white tiles = more white tiles!)

Ex.  $(+4) + (+6) = +10$  (can also be written as  $4 + 6 = 10$ )




"earn \$4" + "earn \$6" = "earn \$10 overall"

- Adding two negatives makes a bigger negative (black tiles + black tiles = more black tiles!)

Ex.  $(-4) + (-6) = -10$



"spend \$4" + "spend \$6" = "spend \$10 overall"

- A positive and a negative: it depends! (one white + one black = zero pair) 
  - Find the difference between the two values
  - Use the sign of the bigger value

Ex.  $(-4) + (+6) = (+2)$



"spend \$4" + "earn \$6" = "earn \$2 overall"

### Adding Practice

- |                   |                    |
|-------------------|--------------------|
| 1. $(-1) + (-4)$  | 8. $(+9) + (-9)$   |
| 2. $(+12) + (-3)$ | 9. $(+6) + (+5)$   |
| 3. $(-1) + (+4)$  | 10. $(+6) + (-3)$  |
| 4. $(+8) + (+7)$  | 11. $(-12) + (-3)$ |
| 5. $(-11) + (+4)$ | 12. $(-5) + (+7)$  |
| 6. $(-5) + (-7)$  | 13. $(-6) + (-3)$  |
| 7. $(+3) + (+9)$  | 14. $(+11) + (+4)$ |

### Subtracting:

- 1) **Add the opposite** (if you skip this step you are likely to make a mistake!)  
*The first integer stays the same, change the subtraction to an addition, the last integer changes to its opposite.*
- 2) Now follow the rules for adding to evaluate.

Ex.  $(-3) - (+4)$   
 $= (-3) + (-4)$  "spend \$3 and spend \$4"  
 $= (-7)$  "spend \$7 overall"

### Subtracting Practice

15.  $(-7) - (+4)$

Add the opposite:

Evaluate:

19.  $(-2) - (+5)$

Add the opposite:

Evaluate:

16.  $(+8) - (+3)$

Add the opposite:

Evaluate:

20.  $(+6) - (-2)$

Add the opposite:

Evaluate:

17.  $(+9) - (-5)$

Add the opposite:

Evaluate:

21.  $(-8) - (-8)$

Add the opposite:

Evaluate:

18.  $(-4) - (-10)$

Add the opposite:

Evaluate:

22.  $(-5) - (+5)$

Add the opposite:

Evaluate:

### Mixed Adding and Subtracting Practice

23.  $(-9) + (-5)$

24.  $(-9) - (-5)$

25.  $(+9) + (-5)$

26.  $(+9) - (-5)$

27.  $(-9) + (+5)$

28.  $(-9) - (-5)$

## **Multiplying and Dividing:**

Start by finding the sign of the answer:

- If there is an even number of negative signs (0, 2, 4, 6, etc.), the solution will be positive
- If there is an odd number of negative signs (1, 3, 5, etc.), the solution will be negative

***These rules are only true to multiplying or dividing, never to adding or subtracting!***

Ex.  $(-10) \div (-2)$

2 negative signs (even #), therefore answer is positive

10 divided by 2 is 5

So the answer is +5

Ex.  $(-1) \times (+2) \times (-3) \times (-1)$

3 negative signs (odd #), therefore answer is negative

1 times 2 times 3 times 1 is 6

So the answer is -6

## **Multiplying/Dividing Practice**

29.  $(+8) \times (-4)$

30.  $(+8) \div (-4)$

31.  $(-8) \times (-4)$

32.  $(-8) \div (-4)$

33.  $(+12) \times (+2) \times (-1)$

34.  $(+12) \div (-1) \times (+2)$

35.  $(-12) \times (+2) \times (-1) \times (+1) \times (-1)$

36.  $(-12) \div (+2) \times (-1) \times (-1)$

37.  $(-100) \div (-25)$

38.  $(-5) \times (-4) \times (+1)$

39.  $(-1) \times (-9) \times (+3) \times (+2) \times (-1)$

40.  $(+7) \div (-1)$

41.  $(+35) \div (+5) \div (-1)$

42.  $(-10) \times (-5)$

## Order of Operations:

Always follow the order of operations when doing problems with more than one step.

- 1) **B**rackets – complete innermost brackets first if there are several
- 2) **E**xponents (Grade 9 only)
- 3) **D**ivision/**M**ultiplication – solve the furthest to the left first if there is more than one
- 4) **A**ddition/**S**ubtraction – solve the furthest to the left first if there is more than one

Always re-copy the entire question down after each step, in the same order it first appeared! It's very helpful to write each step on the line below.

Ex. $(-9) - \frac{(+8)}{(-2)} + (+7)$	Division first
$= (-9) - (-4) + (+7)$	Subtraction next (it's further left than the addition)
$= \frac{(-9) + (+4)}{+ (+7)}$	Add the opposite
$= (-5) + (+7)$	Addition
$= 2$	

## Order of Operations Practice

43.  $(-6) - (-10) \times (+2) + (+1)$

46.  $(+8) \div (-4) \times (+3) - (-1) + (+4)$

44.  $(+3) \times (-1) + (+9) - (-2)$

47.  $(+9) - (-3) + (+6) + (-1) - (+4)$

45.  $(-7) + (-3) - (+9) \div (-3)$

48.  $(-9) \div [(-5) + (+2)] \times (-1)$