Names (pair) _____ Date _____

Mental Calculation with Integers

Example

When we add several integers, we can **group** them: the positive ones together and the negative ones together.

$-7 + 12 + (-3) + 8 = (12 + 8) + (-7 + (-3)) = 20 + (-10) = 10$

Opposite numbers add up to 0: $15 + (-15) = 0$. We can cross out such pairs straight away.

1 ON YOUR OWN Work out by grouping. Look for opposite numbers first.

$8 + (-5) + 2 + (-5) =$ ☐

$-12 + 7 + (-8) + 13 =$ ☐

$25 + (-17) + (-25) + 17 =$ ☐

$-6 + (-4) + 10 + (-9) =$ ☐

2 ON YOUR OWN **Brackets and signs.** Write without brackets, then work it out.

$9 - (-4) + (-6) =$ ☐ $=$ ☐

$-3 + (-2) - (-7) =$ ☐ $=$ ☐

$10 - (+6) - (-1) =$ ☐ $=$ ☐

$-(-5) - 8 =$ ☐ $=$ ☐

3 IN PAIRS The unknown is in a different place each time. Write the missing number.

☐ $+ (-6) = 2$

$-4 +$ ☐ $= -9$

☐ $- 5 = -8$

$3 -$ ☐ $= 7$

$-10 -$ ☐ $= -4$

☐ $+ 8 = 0$

Names (pair) _____ Date _____

Remember

Removing brackets: $+\,(-a)$ becomes $-\,a$; $-\,(-a)$ becomes $+\,a$; $-\,(+a)$ becomes $-\,a$. Opposite numbers add up to 0. Addends may swap places, but a sign always travels with its number.

4 IN PAIRS **Find the mistake.** Describe the mistake and work it out correctly.

calculation	what went wrong	correct
$-8 + 3 = -11$		
$6 - (-6) = 0$		
$-2 - (-9) = -11$		

5 IN A GROUP CHALLENGE **Magic square.** Write the numbers -4 to 4 (each once) so that every row, column and both diagonals add up to 0.

-3		1
	0	

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Operations mode: enter -5, choose subtraction and enter -8. Step through. Why do we need to add zero pairs?

★ ON YOUR OWN **Exit card.** $-15 + 8 + (-5) + 12 =$ ☐