Addition and Subtraction of Integers 1 – Solve problems involving integers, including word problems.
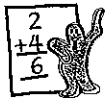
Examples

a) Calculate $^-2 + 5$

b) Calculate $2 - 6$

a) The $^-2$ gives us our starting point.
The $+$ tells us to move to the right.
The 5 tells us the number of steps to move.

Therefore $^-2 + 5 = 3$

By calculator $\boxed{(-)}$ $\boxed{2}$ $\boxed{+}$ $\boxed{5}$ $\boxed{=}$

b) The 2 gives us our starting point.
The $-$ tells us to move to the left.
The 6 tells us the number of steps to move.
Therefore $2 - 6 = ^-4$

By calculator $\boxed{2}$ $\boxed{-}$ $\boxed{6}$ $\boxed{=}$

Evaluate the following using your calculator if you wish.

1. $^-14 + 6 =$ ....

2. $^-14 - 9 =$ ....

3. $^-23 + 37 =$ ....

4. $^-34 + 18 =$ ....

5. $^-72 + 48 =$ ....

6. $^-10 + 15 - 24 =$ ....

7. $36 - 22 - 48 =$ ....

8. $^-19 - 15 + 59 =$ ....

9. $47 - 93 + 112 - 30 =$ ....

10. $^-87 + 95 - 34 + 68 =$ ....

Application Problems

Write each of the following as an integer expression and then solve.

11. Simon's balance in his bank account is $55 OD (i.e. $^-$55). He deposits a cheque for $92 into the account. What is the new balance of his account?

12. The temperature at the Antarctic is reported as $^-16°$ C. Sometime later the temperature drops another 9 degrees. What is the current temperature?

13. A diver is at a depth of $^-34$ metres, i.e. 34 metres below sea level. If he rises 16 metres what is his new depth?

14. Ana had $17 in her bank account. She wanted to buy a digital watch costing $8, a bracelet costing $5, a ring costing $4, a tee shirt costing $9 and some socks costing $6. Does she have enough money. If not, how much short is she?

15. A freezer shows a reading of $^-41°$ C. If the temperature rises 32°C, then drops 19° C what is the current temperature of the freezer?
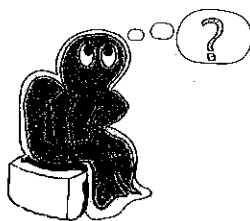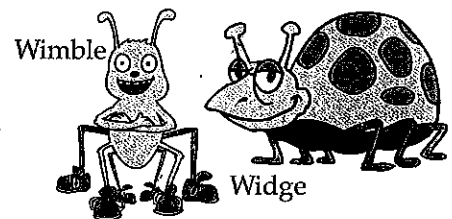
Problem Solving

There are some widges and some wimbles in a jar. Altogether they have 34 legs (or arms). If wimbles have 8 legs (or arms) and widges 6 legs, how many of each is there?
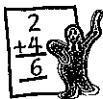
Wimble

Wimbles ....   Widges ....

Widge

I found this work

Easy   OK   Difficult

Proportion completed

None   Few   Half   Most   All

Date:

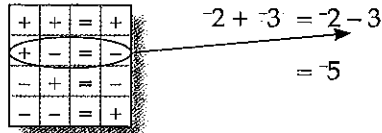## Addition and Subtraction of Integers 2 – Solve problems involving integers, including word problems.

Example
Calculate $^-2 + ^-3$

Begin by replacing the two inner signs by a single sign using the **Rules for the 'Gap'** below. The 'Gap' is the space between the two numbers.

+	+	=	+
+	–	=	–
–	+	=	–
–	–	=	+

$^-2 + ^-3 = ^-2 - 3$

$= ^-5$

By calculator

(–)	2	+	(–)	3	=

When the two inner signs are the same the single sign becomes a +.

When the two inner signs are different the single sign becomes a –.

Calculate the following integer problems using your calculator if you wish.

1. $18 + ^-6 =$ _____

2. $^-24 - ^-19 =$ _____

3. $43 + ^-27 =$ _____

4. $12 - ^-13 =$ _____

5. $^-12 + ^-8 - ^-5 =$ _____

6. $^-30 + ^-27 - ^-14 =$ _____

7. $27 + ^-20 - ^-17 + ^-11 =$ _____

8. $^-65 + ^-15 - 18 - ^-23 =$ _____

9. $^-28 - ^-47 + ^-29 =$ _____

10. $56 - ^-38 + 17 + ^-21 =$ _____

Problem Solving
If seven coins add to $1, what could the coins be?

Application Problems
Write each of the following as an integer expression and then solve.

11. A farmer drilling for water on his property has reached a depth of 28 metres ($^-28$ m). The drill is lifted up 9 metres to clear a blockage and then drills down from this point 15 metres ($^-15$ m). What depth is the drill at?

_____

_____

12. Artifacts found by an archaeologist are dated at 240 BC ($^-240$). Other artifacts from another site are estimated to be 180 years older. How old are these artifacts estimated to be?

_____

_____

13. A diving bell is lowered to a depth of $^-124$ metres, i.e. 124 metres below sea level. If it rises 38 metres and then drops a further 65 metres from this point what is its new depth?

_____

_____

Fun Spot Put the numbers $^-4, ^-3, ^-2, ^-1, 0, 1, 2, 3, 4$ in the magic square so that each column, row and diagonal total 0. The numbers 0 and 2 have been placed for you.

	0	
	2	

_____

_____

_____

_____

I found this work			Proportion completed					
Easy	OK	Difficult	None	Few	Half	Most	All	Date: