Use a calculator for directed number calculations

1 Use a calculator to work out the calculations.

a) $17^2 =$ ⬚

$(-17)^2 =$ ⬚

$-17^2 =$ ⬚

b) $25^2 =$ ⬚

$(-25)^2 =$ ⬚

$-25^2 =$ ⬚

c) $31^2 =$ ⬚

$(-31)^2 =$ ⬚

$-31^2 =$ ⬚

d) $9.2^2 =$ ⬚

$(-9.2)^2 =$ ⬚

$-9.2^2 =$ ⬚

What do you notice?

Why does this happen?

Talk about it with a partner.

2 Use a calculator to work out the calculations.

a) $18 - (-3.5) + -4.08 =$ ⬚

b) $-5.2 \times -0.8 + -13.26 =$ ⬚

c) $\dfrac{-217.9 + -971.2}{-10^2} =$ ⬚

d) $\dfrac{(-2.3) \times (-5.8)}{(-0.5)} =$ ⬚

e) $(-0.4)^2 \times \dfrac{4}{25} =$ ⬚

f) $0.25 \div (-\dfrac{1}{4}) =$ ⬚

3 Explain why all these fractions are equal.

$-\dfrac{3}{8}$ $\dfrac{-3}{8}$ $\dfrac{3}{-8}$

_____

_____

4 Write <, > or = to compare the calculations.

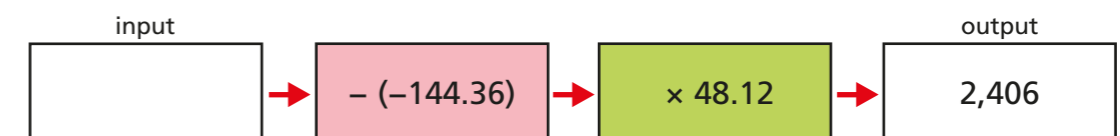**a)** $23.2 + -8 - (-4.09)$ ◯ $23.2 + -(8 - (-4.09))$

b) $\dfrac{-4}{25} \times -2.5^2$ ◯ $(2.5)^2 \times -\dfrac{4}{25}$

c) $\dfrac{15.08 + -85.1}{-3}$ ◯ $15.08 + -85.1 \div -3$

5 Find the outputs of these function machines.

input
| −4.3 | → | + −9.21 | → | × −5.6 | → | output ⬚ |

input
| −4.3 | → | × −5.6 | → | + −9.21 | → | output ⬚ |

6 Find the inputs of these function machines.

input
| ⬚ | → | − (−144.36) | → | × 48.12 | → | output 2,406 |

input
| ⬚ | → | × 48.12 | → | − (−144.36) | → | output 2,406 |

7 Simplify the expressions by collecting like terms.

a) $28h + -1.4m - -2.09h + -31.6m - h \equiv$ _____

b) $-19.4y + 7.82g - -50.2g + -44y \equiv$ _____

c) $1.47p^3 + -0.3p^2 - -0.3p^3 + -1.47p^2 + 3p^3 \equiv$ _____

8 Find the next three terms in these linear sequences.

a) $-2.3, 1.76, 5.82,$ [ ] , [ ] , [ ]

b) $-0.37, -0.434, -0.498,$ [ ] , [ ] , [ ]

9 Find the next three terms in these geometric sequences.

a) $2, -7.2, 25.92,$ [ ] , [ ] , [ ]

b) $-85.7, -42.85, -21.425,$ [ ] , [ ] , [ ]

What do you notice about the terms in the sequence in part a)?

Will the terms always be negative in sequence b)?

10 Calculate the missing numbers to make the number sentences correct.

a) $(-4.2)^2 \times$ [ ] $= -132.3$

$-4.2^2 \times$ [ ] $= -132.3$

b) $0.18 =$ [ ] $- -18 + -1.8$

$0.18 =$ [ ] $- (-18 + -1.8)$

11 a) In this magic square, the numbers in any row, column or diagonal add to the same number.

Fill in the missing numbers.

−0.2	−0.6	2
	1.4	

b) In this magic square, the product of each row, column or diagonal are equal.

Fill in the missing numbers.

	1	
0.5	0.01	−0.2

What do you notice about the numbers at opposite sides of the magic square?

12 Create your own **addition** magic square using these numbers.

−0.5   −0.1   0.1   0.3   0.5   0.7   0.9   1.1   1.5