

Electro Critical Skills Resource Suite



Entry Level Literacy and Numeracy Assessment for the Electrotechnology Trades

Enrichment Resource

UNIT 3: Order of Operations



managing apprentice progression

An E-Oz Energy
Skills Australia project.



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ORDER OF OPERATIONS

In mathematics the order in which we carry out the mathematical operations can have an effect on the result of the mathematical equation and we may end up with an incorrect result.

e.g.

$$6 - 4 \times 3 = 6$$

$$(6-4) \times 3$$

$$2 \times 3 = 6$$

Or

$$6 - 4 \times 3 = -6$$

$$6 - (4 \times 3)$$

$$6 - 12 = -6$$

A difference of 12 between the two results.

LEARNING OUTCOME

- Can understand and apply the mathematical rule for the order of operations.

PERFORMANCE CRITERIA

- Identifies the need to apply the order of operations
- Knows the rule for the order of operations
- Uses the rule to accurately work out the answer to problems



EXERCISE 1

Answer the following without using the calculator. Show your working.

a. $8 \times 8 + 4 =$

b. $6 \times 5 + 8 \times 3 =$

c. $27 \div 3 + 11 =$

d. $9 - 63 \div 9 + 14 \times 2 =$

e. $(9 - 6) \times (3 + 5) =$

f. $81 \div 9 \times (2 + 4) =$



Use the answer sheet to check your work.



Using the calculator

Some calculators automatically take the BODMAS rule into account as you work from left to right.

Check your calculator by performing the following operation:

$$5 + 4 \times 9 = 41$$

Note: If your calculator does not have bracket keys, you will need to perform the operations in brackets first, record your answers and then work through the calculations.

EXERCISE 2

Use your calculator to answer the following:

a) $6 + 4 \div 4 - 3 =$

b) $62 + 64 \div 4 - 12 =$

c) $8.2 \times 8 + 4 =$

d) $(18 + 15 + 16) \div (63 \div 9) - 5 =$

e) $(25 \times 7) \times 3 \div (75 \div 15) =$



Use the answer sheet to check your work.

ANSWERS

EXERCISE 1

- a) $8 \times 8 + 4 = 64 + 4 = 68$
- b) $6 \times 5 + 8 \times 3 = 30 + 24 = 54$
- c) $27 \div 3 + 11 = 9 + 11 = 20$
- d) $9 - 63 \div 9 + 14 \times 2 = 9 - 7 + 28 = 30$
- e) $(9 - 6) \times (3 + 5) = 3 \times 8 = 24$
- f) $81 \div 9 \times (2 + 4) = 81 \div 9 \times 6 = 54$

EXERCISE 2

- a) $6 + 4 \div 4 - 3 = 4$
- b) $62 + 64 \div 4 - 12 = 66$
- c) $8.2 \times 8 + 4 = 69.6$
- d) $(18 + 15 + 16) \div (63 \div 9) - 5 = 2$
- e) $(25 \times 7) \times 3 \div (75 \div 15) = 105$