

Numeracy 2018 v1.1

IA2A sample assessment instrument

October 2018

Examination — short response

This sample has been compiled by the QCAA to assist and support teachers to match evidence in student responses to the characteristics described in the instrument-specific standards.

Assessment objectives

This assessment instrument is used to determine student achievement in the following objectives:

1. select and interpret mathematical information related to the workplace and employment
2. select from and use a variety of mathematical and problem-solving strategies in workplace and employment contexts to solve some problems
3. use oral and written mathematical language and representation to communicate mathematically in workplace and employment contexts.

Note: Objectives 4 and 5 are not assessed in this instrument.

Subject	Numeracy	Instrument no.	IA2A
Technique	Examination — short response		
Topic	2: The work environment		
Conditions			
Response type	Short response		
Time	60 minutes	Perusal	5 minutes
Other	<ul style="list-style-type: none"> • If computers are used, ensure that the purpose of this instrument is maintained. • Open book or notes may be allowed; these conditions must be clearly outlined on the assessment instrument. 		
Instructions			
<ul style="list-style-type: none"> • Show all working in the space provided. • Write using black or blue pen. • Calculators may be used. 			
Criterion		Result	
Numeracy Assessment objectives 1, 2, 3			

Total marks: 26

Question 1 (1 mark)

A builder uses 64.3 metres of wood in a building project.
Determine the value of the digit '3' in millimetres.

Question 2 (1 mark)

A carpenter drives 63 kilometres, 29 kilometres and 84 kilometres to three different jobs. Determine the total distance the carpenter travelled in kilometres.

Question 3 (1 mark)

If a trade assistant uses 123 screws from a box that holds 250 screws, how many screws are left?

Question 4 (1 mark)

An apprentice has 28.5 L of varnish to use on six jobs. If each job needs the same amount of varnish, determine the amount needed for each job in litres.

Question 5 (1 mark)

A concreter has to pave a driveway that is a rectangle 3 metres wide and 12.8 metres long. Determine the total paved area in m^2 .

Total marks: 26

Question 6 (1 mark)

My job interview was scheduled for 8:00 am. When I arrived at the workplace, my watch was displaying the following time:



How early was I to my interview?

Question 7 (2 marks)

A store is offering a 20% discount on clothing. Determine the new price a customer would pay for a suit that had an original price of \$300.

Question 8 (3 marks)

A plumber buys five taps at \$19.95 each, 10 washers at \$0.50 each and eight springs at \$0.99 each. Estimate the approximate total cost in dollars with a 'back-of-the-envelope' calculation.

Question 9 (3 marks)

A local building company is planning to build a house. It estimates that the builders will be on site for 60 days.

- a. Determine the number of weeks the builders will work if they work from Monday to Friday.

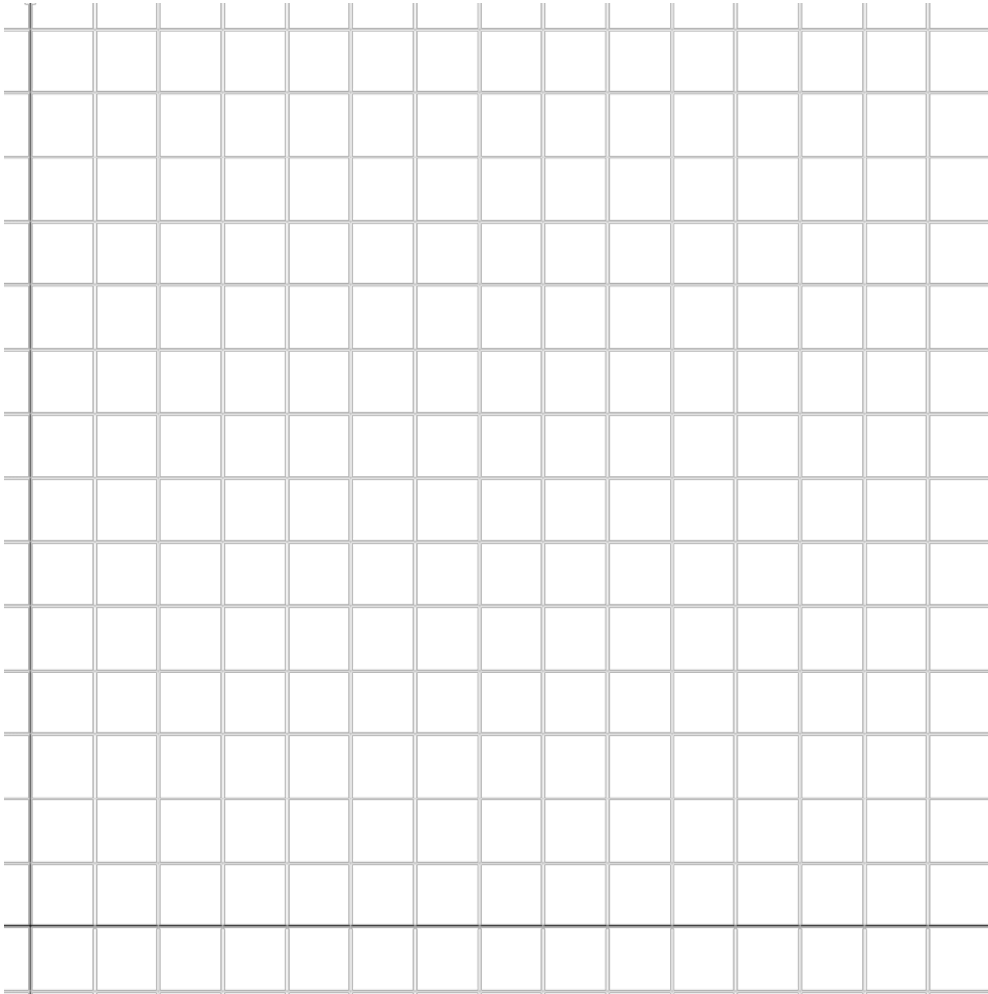
- b. How many weeks will it be if they agree to work Saturdays as well?

Total marks: 26

Question 10 (4 marks)

A survey was conducted at a school of 120 students to determine how they travelled to school. It was found that 52 students walked to school, 35 travelled by car, 13 caught a bus and the remainder rode a bike.

Represent this information as a bar graph using the graph paper below.



Question 11 (4 marks)

This is part of a bus timetable for a place called Broadbridge.

BUS TIMETABLE				
Broadbridge line				
Stop	am	am	am	am
Depot	6:05	6:25	6:45	7:05
Green Street	6:13	6:33	6:53	7:13
Forest Road	6:22	6:42	7:02	7:22
Brook Street	6:34	6:54	7:14	7:34
Halford Road	6:42	7:02	7:22	7:42
Central Railway Station	6:53	7:13	7:33	7:53

a. Sandra catches the bus from Forest Road to Central Railway Station to travel to work. According to the timetable, how regularly does the bus leave Forest Road?

b. How many minutes does it take the bus to travel from Forest Road to Central Railway Station?

c. Assuming the same times for the home trip, how much time does Sandra spend on the bus in a working week (Monday to Friday) in hours and minutes?

d. Sandra's bus fare is \$3.95 for a single journey. How much does it cost her to travel to and from work each week?

Total marks: 26

Question 12 (2 marks)

A landscaper needs $\frac{1}{8}$ of a bag of mulch to complete a job. A full bag of mulch weighs 20 kilograms and she has a bag that is still $\frac{3}{4}$ full. How much will this bag weigh when she has completed the job?

Question 13 (2 marks)

Nathan wants to buy a laptop for work and sees this advertisement for one that will suit his needs.



Lowest prices guaranteed!

\$899
or
\$45 per month
for 2 years!

Determine the price difference if he chooses to pay off the laptop monthly instead of paying the advertised price up-front.

Instrument-specific standards

Numeracy	
The student work has the following characteristics:	Grade
<ul style="list-style-type: none"> • selection and thoughtful interpretation of mathematical information related to the workplace and employment • accurate selection and use of a variety of effective practical mathematical and problem-solving strategies when applying mathematics in workplace and employment contexts to solve problems • controlled use of written mathematical language and representation to communicate mathematically in workplace and employment contexts. 	A
<ul style="list-style-type: none"> • appropriate selection and interpretation of mathematical information related to the workplace and employment • selection and of a variety of relevant mathematical and problem-solving strategies in workplace and employment contexts to solve problems • some control in the use of written mathematical language and representation to communicate mathematically in workplace and employment contexts. 	B
<ul style="list-style-type: none"> • selection and interpretation of mathematical information related to the workplace and employment • selection and use of a variety of mathematical and problem-solving strategies in workplace and employment contexts to solve some problems • use of written mathematical language and representation to communicate mathematically in workplace and employment contexts. 	C
<ul style="list-style-type: none"> • selection and superficial interpretation of basic mathematical information related to the workplace and employment • selection and variable use of some practical mathematical and/or problem-solving strategies in workplace and employment contexts to make some progress • fragmented and unclear use of written mathematical language and representation in mathematical communication in workplace and employment contexts. 	D
<ul style="list-style-type: none"> • use of rudimentary aspects of mathematical information related to the workplace and employment • inaccurate and sporadic use of mathematical strategies in workplace and employment contexts • infrequent and unclear use of mathematical language in workplace and employment contexts. 	E