

Diploma Program

Diagnostic Exercises



Many thanks for considering a Diploma program at the University of Southern Queensland.

Could you answer the following questions as well as the Communication, ICT and Maths exercises that follow and then scan and email the completed document to us at: **oac@usq.edu.au**

We will then be in touch to give you some feedback so you can start your exciting university studies as a confident and informed student.

Name: _____

Mobile: _____

Phone: _____

Email: _____

When we give you feedback on your answers do you want us to contact you by (please circle):

Phone

Email

If you want us to ring you when is the best time to phone?

Task 1

1. Which Diploma program have you enrolled in:

- Aboriginal and Torres Strait Islander Studies
- Business
- Creative Arts
- Engineering and Spatial Science
- Science
- Social Studies

2. Have any of your close friends or relatives undertaken university study?

- Yes
- No

If Yes, then please indicate who that is from the following:

- Spouse
- Friend
- Parent
- Other close acquaintance _____

3. Are you of Non-English Speaking Background (NESB)?

- Yes
- No

If Yes, did you complete any secondary schooling in Australia? If so, what year level did you complete in Australia?

4. What is the highest level of education you have previously achieved? Select one or more:

- No school at all or primary school only
- Some, but not all of secondary school
- Year 12 of secondary school
- Vocational certificate or diploma (e.g. TAFE)
- Undergraduate university degree or diploma
- Other _____

5. What year did you leave secondary school?

6. How many years is it since you last did any formal study (e.g. school, vocational education)? Select one:

- Less than 2 years
- 2 - 5 years
- 6 – 10 years
- More than 10 years
- Explain what those studies were:

7. Are you employed in paid work? If yes, please indicate approximately how many hours per week. Select one:

- I am not in paid employment
- Less than 5 hours per week
- 6 – 14 hours per week
- 15 – 25 hours per week
- More than 25 hours per week
- Full-time

8. How many hours per week will you be able to devote to study?

- 40 hours (full-time enrolment)
- 20 hours (part-time enrolment)
- 10-20 hours
- Less than 10

9. How will you find enough time for study?

- I have enough spare time for study without reducing time spent on other activities
- Reduce the number of hours spent in employment
- Reduce the number of hours spent on family commitments
- Reduce the number of hours spent on leisure activities

10. What level of computer and online access do you have? Select one:

- All the time
- Frequently
- Occasionally
- Rarely
- Never

**11. What are you hoping to achieve by doing this Diploma Program?
Write a brief answer below:**

12. Which core Diploma course(s) are you intending to enroll in for your first semester (each course will require ten hours a week student input):

- DIP1000 E-Literacy for Contemporary Society
- DIPP1001 Academic and Professional English
- DIP1002 Strategies for Successful Study
- DIP1003 Essential Mathematics DIP1004
- Mathematical Literacy

Note:

If enrolling in either Diploma of Engineering and Spatial Science or Diploma of Science then you must enrol in DIP1003 Essential Mathematics. If enrolling in any of the other programs you must enrol in DIP1004 Mathematical Literacy.

Thank you for answering these questions.

Now progress on to our communications exercises

Task 3: Information Technology Skills Exercise

Your name: _____

If you have any concerns at all about your ICT skills or any other matter relating to this course please let me know.

1. Have you ever created the following: (tick all options that apply).

Select one or more:

- Wiki
- Web Page
- Blog
- YouTube clip
- Podcast
- None of the above

2. What kind of internet connection do you have? Select one:

- Dial up
- Broadband - ADSL
- Mobile broadband
- Other

3. How often do you use email? Select one:

- Occasionally
- Often
- Never

4. How often do you use word processing software? Select one:

- Occasionally
- Often
- Never

5. How often have you used a spreadsheet? Select one:

- Occasionally
- Often
- Never

**6. How often do you use presentation software (e.g. PowerPoint)?
Select one:**

- Occasionally
- Often
- Never

**7. How often do you use social networking sites like
Facebook, Windows Live and twitter? Select one:**

- Occasionally
- Often
- Never

**8. How often do you use web based information services (e.g.
Google, Ask.com)? Select one:**

- Occasionally
- Often
- Never

9. What office software will you be using? There are the 2 main ones, does anyone use anything else? Select one or more:

- Microsoft Works
- Microsoft Office
- Open Officer
- Other
- None

10. Do you know what operating system (OS) you use? Maybe you will need to do some research if you are not sure what you are using? The 3 main Windows OS's are listed as well as some others. Select one or more:

- Windows XP
- Windows Vista
- Windows 7
- Windows 8
- MAC OS
- Linux
- Other

End of Information Technology Skills Exercise

Task 4: Maths Skills Exercise

Your name: _____

Please write a few sentences in the box below about your previous mathematics studies.

What was the last mathematics that you studied (e.g. Level A Maths in Year 12) and how long ago was that?

Do you find Mathematics a difficult subject or not?

What diploma do you plan to enroll in?

Part A – (approximately 10 minutes)

Question	Answer
1. Write the following number in numerals: Twenty thousand two hundred and six.	
2. $102 - 36 =$	
3. $1048 + 21376 =$	
4. $23 \times 145 =$	
5. $168 \div 12 =$	
6. Add the following list of numbers 213, 4017, 1273, 2198, 21	
7. $\sqrt{64} =$	
8. $\$2 - \$1.34 =$	
9. Complete the sequence by filling in the missing numbers 2 9 16 23 ___ ___	

10. The following is an extract from a bank account book:

Date	Deposit	Withdrawal	Balance
13/01/2014			51 717.11
26/01/2014		400.00	51 317.11
31/01/2014	636.21		51 953.32
09/02/2014		400.00	51 553.32
10/02/2014		20.83	51 532.49
23/02/2014		500.00	51 032.49
28/02/2014	589.57		
10/03/2014		20.83	
31/03/2014		900.00	

Some definitions...

Deposit Add money to the bank account

Withdrawal Take money out of the account

Balance The amount of money in the account

What was the balance of the account on 31/03/2014?

\$ _____

Hint: Complete missing balances

Part B – (approximately 40 minutes)

Question	Answer
1. $\frac{3}{4} = \frac{15}{?}$	
2. $7 + 2 \times 3 =$	
3. Round 495 to the nearest 10	
4. $12 + ? = -6$	
5. 15% of \$321.00 =	
6. Express $\frac{3}{4}$ as a decimal	
7. $-5 \times -3 =$	
8. $\frac{3}{4} - \frac{2}{9} = ?$	
9. $-16 - -4 =$	
10. Express 24% as a decimal	
11. $\{ 2 - 3 [3 - 5] \}_2 =$	
12. 36 m = ___ mm	
13. 1.23 mg = ___ g	
14. Express 3 427 874 in scientific notation	
15. Express 4.967×10^4 as an ordinary number	

16. A company registered on the stock exchange had the following share prices of stock listed in the newspaper.

Day	Cost
May 3	1.40
May 10	1.60
May 17	1.80
May 24	Figures not available
May 31	1.40
June 7	1.40
June 14	1.60

- a) What would you expect the share price to be on May 24?
b) What would you expect the share price to be on June 21?

Explain your answer.

17. A patient is to receive 420mL of fluid over a 7 hour period from a drip machine:

- a) What is this rate in millilitres per minute (mL/min) ?
b) If the drip machine delivers medicine at the rate of 60 drops per millilitre, how many drops per minute will be needed to deliver the medicine in the correct time?

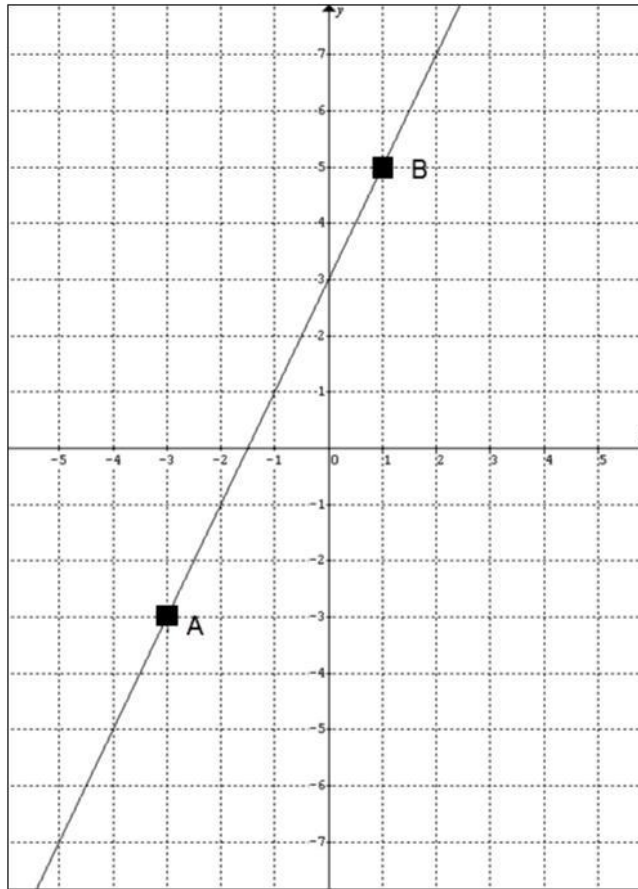
18. A 598 m² suburban block of land was advertised for sale at \$39 000, while an equally well situated block of area 980 m² was priced at \$64 000. Which was the better value for money on a dollars/square metre basis?
19. On a plan of a house, a rectangular room is shown with sides of length 6 cm and 8 cm respectively. If the scale used is 1:80 what are the lengths of the room?
20. A gardener marks out a new section of lawn that is supposed to be a rectangle with sides of length 15m and 10m respectively. To check he has marked out a rectangle he measures the length of the diagonal. How long should this be?

End of Part B

Part C – (approximately 40 minutes)

Question	Answer
1. Give a value of t that satisfies the inequality $t \leq -4$	
2. Express 3^{-2} as fraction	
3. Evaluate $\sqrt{x_2 + y_2}$ when $x = 3$ and $y = 4$	
4. Expand $(x + 1)(x - 2)$	
5. Simplify $6x^2 + y^2 - x^2 + 5 + x - 3y^3$	
6. Solve for x , $3(2x + 1) = 21$	
7. Solve for x , $5x + 7 = 2x - 3$	
8. Make x subject of the formula $2y = \frac{5 - \sqrt{x}}{3}$	
9. Factorize $3ax + 12a$	
10. Evaluate $y = 3^x$ when $x = 4$	
11. Find the values of x and y if $x + 2y = 4$ and $2x - 3y = 1$	

12.



For the above graph find

a) its slope	
b) the y - intercept	
c) its equation	
d) the distance between points A and B	

13. For $y = 3x^2 + 4x$ fill the table of values below.

x	-2	-1	0	1	2
y					

14. Give the domain and range of $f(x) = \sqrt{x-2}$

15. Complete these rules

a) $\log ab =$

b) $\log a^b =$

16. Factorise $x^2 - x - 6$

End of Part C