## STUDY SKILLS <br> LANTITE: SAMPLE NUMERACY TEST

The following questions are adapted from ACER's Numeracy Practice Test Questions.

## Section 1: Calculator Available

## Gym Membership

The table below shows gym membership fees for different types of memberships:

| Type | Joining Fee | Monthly Fee |
| :--- | :---: | :---: |
| Silver | $\$ 30$ | $\$ 50$ |
| Gold | $\$ 50$ | $\$ 90$ |
| Platinum | $\$ 70$ | $\$ 130$ |

1. What is the total cost for a new six month Gold membership?
2. Which formula shows how to calculate the cost of a new gym membership for months (where $m$ is the number of months)?
A. (Joining Fee + Monthly Fee) $\times m$
B. Joining Fee $\times m+$ Monthly Fee
C. Joining Fee + Monthly Fee $\times 12$
D. Joining Fee + Monthly Fee $+m$
E. Joining Fee + Monthly Fee $\times m$
3. Luke is considering joining the gym, and is wondering whether to take out a Gold or Platinum membership. How much more would a Platinum membership cost him for the first year?

## Infographic

This infographic shows some statistics about Australians gathered from the 2016 census:


Based on Australian Bureau of Statistics data, 2016
4. Are the following statements True or False?

- There were more than 15 million Australians aged between 15 and 64.
- The number of people born in countries with percentages not included in the infographic is less than double the combined number of people born in England, India, China and New Zealand.
- Less than one in five Australians are aged between 0 and 14.

5. Sarah earned $30 \%$ more than the average weekly gross household income for each week of the 2016 calendar year. Which of the following is the closest to Sarah's gross annual income for 2016?
A. \$22000
B. \$52000
C. $\$ 76000$
D. $\$ 90000$
E. \$97000

## Paddleboard Hire

6. A hire shop rents stand up paddle boards for $\$ 12$ an hour (or part of an hour) up to a maximum of $\$ 50$ per day. Sarah is considering hiring the board from 10:30am until 2 pm on the same day, but is wondering if she will want more time; how much extra would she need to pay to hire the board from 10:30am until 4 pm on the same day?

## Running Course

7. A 4000m running course has four drink stations. The distances between the start and the first station, between each station, and between the last station and the finish, are all equal. What is the distance between each drink station?

## Test Results

Test results for a year group of 67 students are displayed in the following table:

| Test mark (out of 40) | Number of students |
| :---: | :---: |
| $1-5$ | 3 |
| $6-10$ | 7 |
| $11-15$ | 12 |
| $16-20$ | 14 |
| $21-25$ | 11 |
| $26-30$ | 9 |
| $31-35$ | 5 |
| $36-40$ | 6 |

8. How many students scored at least 16 on the test?
9. Are the following statements True or False?

- The median test score was in the range 21-25.
- The mean score can be estimated by dividing the total marks on the test by 8.


## Socio-Educational Advantage

10. The Index of Community Socio-Educational Advantage (ICSEA) measures the relative educational advantage of schools in Australia. Based upon family background data, the student population is distributed across four quarters.

These two graphs show how the distribution of students has changed for a school between 2012 and 2018.

The total number of enrolments at the school was 172 in 2012 and 495 in 2018.



Adapted from: MySchool website, ACARA, 2018
Are the following statements True or False?

- In 2012, more than $50 \%$ of the students at the school were located in the middle two quarters.
- Of all the quarters, the school distribution percentage decreased the most between 2012 and 2018 for the bottom quarter.
- The number of students at the school in the lower middle quarter decreased from 2012 to 2018.
- The percentage for the school distribution was greater than the Australian distribution for the top two quarters in both years.


## Electronic Devices

11. The graph below displays the results of a study that investigated whether the use of electronic devices affected student achievement. The graph shows the percentage of correct answers on three different assessments (quizzes, a unit exam and a final exam) for students who were allowed to use devices, and those who weren't. Note that non-overlapping error bars indicate statistical significance.


Adapted from: International Journal of Experimental Educational Psychology, 2018
Are the following statements True or False?

- For the unit exam, the students who were allowed electronic devices performed significantly better than those who were not allowed to use electronic devices.
- A significant difference in achievement was observed for both exams, but not for the classroom quizzes.
- Students who were not allowed to use electronic devices performed better in all three assessment types.
- Students who were allowed to use electronic devices performed over $10 \%$ better in the final exam than in the classroom quizzes.


## Sports Day

A teacher is organising an inter-school sports day. There are 10 teams in the competition, and each team must play one game against each of the other teams in rounds of games held throughout the day.
12. The following formula can be used to determine the total number of games:
total number of games $=\frac{\text { number of teams } \times(\text { number of teams }-1)}{2}$
Use this to answer the following:
a. How many games will be played in total?
b. How many rounds of games will need to be played?*
c. The sports day runs from 9 am to $3 p m$, with a 15 minute break for recess, a 30 minute break for lunch, 5 minutes between each round of games and 5 minutes at the end of the day for the winners to be announced. How long should each round of games go for?*
*Extra questions if you want to challenge yourself!
13. The teacher uses a system to ensure that each team plays against each other team exactly once. The tables below show the five games for the first three rounds:
Round 1

| Game 1 | Game 2 | Game 3 | Game 4 | Game 5 |
| :---: | :---: | :---: | :---: | :---: |
| Team 1 | Team 2 | Team 3 | Team 4 | Team 5 |
| Team 10 | Team 9 | Team 8 | Team 7 | Team 6 |

Round 2

| Game 1 | Game 2 | Game 3 | Game 4 | Game 5 |
| :---: | :---: | :---: | :---: | :---: |
| Team 1 | Team 10 | Team 2 | Team 3 | Team 4 |
| Team 9 | Team 8 | Team 7 | Team 6 | Team 5 |

Round 3

| Game 1 | Game 2 | Game 3 | Game 4 | Game 5 |
| :---: | :---: | :---: | :---: | :---: |
| Team 1 | Team 9 | Team 10 | Team 2 | Team 3 |
| Team 8 | Team 7 | Team 6 | Team 5 | Team 4 |

If the teacher continues with this system, then which team will play against Team 3 in round 4 ?

## Infection Model

14. This is a simple example of how people in a community might become infected with a disease. One infectious disease has a reproduction rate of $20 \%$. For example, if a person with the disease encounters 10 people while infected, then 2 people ( $20 \%$ of 10 people) are likely to be infected.




However, with a vaccination rate of $50 \%$, where $50 \%$ of the 10 people are vaccinated against the disease, then only 1 person ( $20 \%$ of 5 people) is likely to be infected.


Adapted from: Quantamagazine, 2018

A highly infectious disease has a reproduction rate of $40 \%$. If the vaccination rate is $80 \%$, how many people in a population of 800 are likely to be infected?

## Nutritional Information

This is part of the information on a 500 g box of cereal:
Serving Size 45g
Servings Per Pack 11

|  | Per Serve | Per 100g |
| :--- | :--- | :--- |
| Protein (g) | 40 | 89 |
| Carbohydrates (g) |  |  |
| Total | 30.6 | 68 |
| Sugars | 9.6 | 21.4 |

15. Using the information per 100 g , what percentage of the total carbohydrates are sugars (rounded to two decimal places)?
16. The recommended daily intake of protein is $45-60 \mathrm{~g}$ for women, and $65-80 \mathrm{~g}$ for men. Are the following statements True or False?

- The amount of protein in two serves of cereal exceeds the maximum recommended amount for men.
- The maximum recommended daily protein intake for women is $75 \%$ of the maximum recommended daily protein intake for men.
- The range of recommended protein intake values for men is greater than the range of recommended protein intake values for women.


## Pre-test Post-test

Five classes in one Year level studied the same topic. The students completed a pre-test at the beginning of the topic and a post-test at the end of the topic. This chart shows the mean scores for each class. Most classes showed higher mean scores on the post-test.

17. Of the classes which showed higher mean scores on the post-test, which class showed the smallest increase from mean pre-test score to mean post-test score?
18. Which class had the lowest post-test score?

## NAPLAN Results

19. This graph shows the percentage of Year 3 students at a selected school in each of six Bands on the National Assessment Program - Literacy and Numeracy (NAPLAN) Reading test, compared to schools with similar students.

Year 3 Reading


Adapted from: MySchool website, Australian Curriculum, Assessment and Reporting Authority (ACARA), 2018

Are the following statements True or False?

- The difference between the total percentage of students at the selected school who are in Bands 3 or 4, and the total percentage of students at schools with similar students who are in Bands 3 or 4, is less than 5\%.
- More than two thirds of the Year 3 students in schools with similar students have Reading scores in Band 5 or above.


## Casual Teacher

20. In 2019, casual relief teachers in one state are paid $\$ 63.47$ per hour, before tax. The rate of pay is also applied on a pro-rata basis (proportionally) for part of an hour. A teacher begins a casual relief position at a school at 8:30am and finishes at 1.15 pm on the same day. How much will the teacher be paid, before tax (rounded to two decimal places)?

## Excursion Staff

21. In a year 1 class there are 2 educators and 26 students. They are planning an excursion to the zoo, and a requirement is for a ratio of at least one adult to every 5 students. What is the minimum number of additional adults required for the excursion?

## Parliament Members

22. This table shows the number of members of the Senate and the House of Representatives in each jurisdiction of Australia:

| Jurisdiction | Number of members of the <br> Senate | Number of members of the <br> House of Representatives |
| :--- | :--- | :---: |
| New South Wales | 12 | 47 |
| Victoria | 12 | 38 |


| Queensland | 12 | 30 |
| :--- | :---: | :---: |
| Western Australia | 12 | 16 |
| South Australia | 12 | 10 |
| Tasmania | 12 | 5 |
| Australian Capital Territory | 2 | 3 |
| Northern Territory | 2 | 2 |
| Total | $\mathbf{7 6}$ | $\mathbf{1 5 1}$ |

The population of Western Australia is approximately 2.7 million people. In Western Australia, what is the average number of people represented by each member of the House of Representatives (rounded to the nearest thousand)?

## Books Purchase

23. A teacher purchases a bulk back of 24 comprehension books, which normally sells for $\$ 190$ but the teacher receives an $8 \%$ discount on the pack. In addition to this, she also needs to purchase 6 comprehension books separately at the individual price of $\$ 8.95$ each, for students that need more and less advanced books. What is the total cost for all the comprehension books?

## Year 12 Results

24. This table shows Year 12 enrolments and a summary of the results for three schools.

| Schools | Number of students <br> enrolled | Median score | Percentage of scores of 40 <br> and over* |
| :--- | :--- | :---: | :---: |
| School A | 96 | 28 | 25 |
| School B | 127 | 31 | 24 |
| School C | 200 | 34 | 12 |

*rounded to the nearest whole percent

Are the following statements True, False or Not Possible to Determine?

- The number of students at school A with scores of 40 and over is the same as the number of students at School C with scores 40 and over.
- The average score for School B was 31.


## Garden Bed

The diagrams below show the frame of a square garden bed from the top and side:

25. The cost of each plank is $\$ 17.50$. What is the total cost of the planks needed to make the frame?
26. The dimensions of each plank are:

- length 1.2 m
- width 0.255 m
- thickness 0.02 m

Which of the following is the closest to the volume of soil required to fill the garden bed?
A. 0.5 cubic metres
B. 0.6 cubic metres
C. 0.7 cubic metres
D. 0.8 cubic metres
E. 1 cubic metre

## Weather Forecast

27. This is the forecast for Smithstown.


Are the following statements True or False?

- There will be more than 10 hours of daylight in Smithstown on the day of the forecast.
- The temperature is expected to range by 10 degrees on the day of the forecast.
- There is a 1 in 10 chance that there will be rain on the day of the forecast.


## Rice Mass

28. A food guide for secondary school camps includes the following advice:

For meals to be served with rice, use 110 g of uncooked rice per person
A group of 57 students and 6 adults attend a school camp. How much uncooked rice, in kilograms, is required to make enough rice for everyone?

## Test Mean

29. A teacher gives the same test to two different classes and summarises the test scores in a table.

| Class | Number of students | Minimum | Maximum | Range | Mean |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Class A | 18 | 14 | 22 | 8 | 19 |
| Class B | 24 | 9 | 18 | 9 | 13.75 |

What is the mean if the scores from both classes are combined?

## Reported Bands

30. This graphs shows how the National Assessment Program - Literacy and Numeracy (NAPLAN) reports student achievement in Years 3, 5, 7 and 9.
Literacy and Numeracy
National Assessment Scale

$\square$ Students are above the national minimum standard


Students are at the national minimum standard

Students are below the national minimum standard
Adapted from: MySchool website, Australian Curriculum, Assessment and Reporting Authority (ACARA), 2018

Are the following statements True or False?

- The National Minimum Standard for Year 7 is Band 4.
- Years 5 and 9 have four bands in common.
- A student who scored in Band 6 would be above the National Minimum Standard regardless of what year they were in.


## Paint

Paint comes in 5 colours: red, blue, yellow, green and white. This table shows how to make additional colours by combining teaspoons in the correct proportions:

|  | RED | BLUE | YELLOW | GREEN | WHITE |
| :--- | :--- | :--- | :--- | :--- | :--- |
| ORANGE | 1 |  | 5 |  |  |
| ROSE | 1 |  |  |  | 5 |
| PISTACHIO |  |  |  | 1 | 3 |
| LIME |  |  | 3 | 1 |  |
| TERRACOTTA | 1 |  | 1 |  |  |

31. Which colour is made by combining:
a. 2 teaspoons of red and 2 teaspoons of yellow?
b. 9 teaspoons of yellow and 3 teaspoons of green?
32. I want to make:
a. 12 teaspoons of rose paint. How many teaspoons of red paint will I need?
b. 30 teaspoons of orange paint. How many teaspoons of yellow paint will I need?

## Fundraising Report

33. This summary of a school's fundraising achievements was included in the newsletter. It has been a fabulous year of fundraising, with $\$ 13,500$ raised in total by our school community. The total includes \$850 raised from morning teas, \$5100 from the quiz night, \$3375 from the sausage sizzle, \$1500 from the Easter and Christmas raffles and thousands of dollars from other events. Well done to our group of hardworking volunteers!

Are the following statements True or False?

- The amount raised from the quiz night was exactly five times the amount raised from morning teas.
- Exactly $25 \%$ of the money fundraised was from the sausage sizzle.
- The amount fundraised from other events was less than $20 \%$ of the total fundraised.


## Driving Directions

Lisa needs to drive from her home in Normanton to start her new job at Hughendon State School. This map shows the distance and the estimated driving time for the route.

34. Which set of directions best describes the route?
A. Drive South on Highway 83, then turn right at Cloncurry and drive on Highway A6
B. Drive North on Highway 83, then turn right at Cloncurry and drive on Highway A6
C. Drive South on Highway 83, then turn left at Cloncurry and drive on Highway A6
D. Drive North on Highway 83, then turn left at Cloncurry and drive on Highway A6
E. Drive West on Highway A6, then turn right at Cloncurry and drive on Highway 83
35. Lisa leaves Normanton at 7:45am and drives for 4 hours and 34 minutes to Cloncurry. After a 41 minute stop for lunch, Lisa leaves Cloncurry for Hughenden State School. What time should she arrive?

## Real Estate Prices

36. These tables show the prices of 7 houses and 10 units sold in a regional city in one month. The prices have been ordered from lowest to highest and rounded to the nearest ten thousand dollars.

| House Prices |
| :---: |
| $\$ 250000$ |
| $\$ 280000$ |
| $\$ 310000$ |
| $\$ 320000$ |
| $\$ 370000$ |
| $\$ 420000$ |
| $\$ 510000$ |


| Unit Prices |
| :---: |
| $\$ 180000$ |
| $\$ 200000$ |
| $\$ 210000$ |
| $\$ 220000$ |
| $\$ 220000$ |
| $\$ 240000$ |
| $\$ 280000$ |
| $\$ 290000$ |
| $\$ 310000$ |
| $\$ 370000$ |

Are the following statements True or False?

- The range of the unit prices is $\$ 70000$ less than the range of the house prices.
- The median unit price is more than the cheapest house price.


## Step Challenge

Two students at a school participate in a step challenge to raise money for charity. They record the number of steps they walk each day for one 10-week term. This table shows the steps they have recorded at the end of week 7 (49 days).

| Name | Total number of steps |
| :--- | :---: |
| Greg | 308000 |
| Jane | 385000 |

37. Greg wants to reach a total of 500000 steps at the end of week 10. What is the average number of steps he will need to walk each day for the next 3 weeks ( 21 days) to reach his goal (rounded to the nearest step)?
38. Jane is sponsored at $\$ 1.50$ for every 1000 steps she walks during the challenge. If she maintains the same average number of steps per week as in the first 7 weeks, how much will she have raised in total at the end of week 10 ?

## Display Board

36. A rectangular display board on a classroom wall is 1.4 metres high and 7.2 metres long. A teacher wishes to place A3-size posters onto the board in landscape orientation.


What is the largest number of A3 size posters that can fit onto the board without overlapping?

## Bachelor Degree

37. This graph shows the percentage of males and females aged 25 to 29 years who had attained a Bachelor degree or above in the period 2010 to 2017.


Are the following statements True or False?

- In 2012, less than $40 \%$ of females aged 25 to 29 years had attained a Bachelor Degree or above.
- In 2015, the difference in the percentage of females and males aged 25 to 29 years who had attained a Bachelor Degree or above was more than 10\%.


## Class Marks

38. In Semester 1 a teacher has given four assessments: two tests and two projects. This spreadsheet shows the marks obtained by six students in the class.

| - | A | B | C | D | E | F | G |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | Student | Term 1 <br> Test <br> Score | Term 2 <br> Test <br> Score | Term 1 <br> Project <br> Score | Term 2 <br> Project <br> Score | Total <br> Score on <br> Tests | Total <br> Score on <br> Projects |
| 2 | Michael | 17 | 13 | 19 | 15 |  |  |
| 3 | Sam | 23 | 16 | 27 | 14 |  |  |
| 4 | Kate | 22 | 18 | 23 | 18 |  |  |
| 5 | Louise | 21 | 17 | 25 | 14 |  |  |
| 6 | Matt | 20 | 10 | 21 | 9 |  |  |
| 7 | Ruby | 28 | 18 | 27 | 20 |  |  |

About spreadsheets:

- Each cell is referred to by the column letter and row number. For example, 'Matt' is in cell A6.
-     * stands for multiplication
- / stands for division

Which cells would the teacher use to calculate Louise's total score on the projects?
A. B6, C6, D6 and E6
B. B6 and C6
C. B 5 and C 5
D. D5 and E5
E. B5, C5, D5 and E5

## Order Form

42. A teacher plans to order at least 250 special learner pencils for the school equipment store. The best price the teacher can find is boxes of 48 pencils at $\$ 24.95$ each. How many boxes will the teacher need to order, and what will be the total price?

## Fuel Consumption

The amount of fuel that cars use to travel a distance is called their fuel consumption and is measured in litres per 100 km . A particular SUV car has a fuel consumption of 7 litres per 100 km and a fuel tank size of 62 litres.
43. How many litres of fuel does the SUV use to travel 475 km (to two decimal places)?
44. Which distance is closest to the maximum distance that the SUV can travel on one full tank of fuel?
A. 434 km
B. 620 km
C. 700 km
D. 885 km
E. 6200 km

## Classroom Plan

45. This is a plan of a classroom. It shows the direction of north. The teacher's table is located in the front corner of the classroom. Four students sit at each of the six tables as shown


Are the following statements True or False?

- The bookcase is located on the south-west corner of the classroom.
- Looking from the teacher's table, facing the back of the classroom, table 6 is in the back left hand corner of the classroom.


## Year 3 Results

This graph shows the National Assessment Program - Literacy and Numeracy (NAPLAN) 2018 Reading results for Year 3 for the eight jurisdictions and also for Australia overall.


Each group's results are represented in a vertical column with various colours.


Adapted from the National Assessment Program-Literacy and Numeracy Achievement in Reading, Writing, Language Conventions and Numeracy: National Report for 2018, Australian Curriculum, Assessment and Reporting Authority (ACARA)
46. For which jurisdiction were the scores of at least $50 \%$ of students at Band 3 or below for

Reading?
A. NSW
B. Vic
C. WA
D. SA
E. NT
47. For how many jurisdictions were the scores of at least $80 \%$ of Year 3 students at Band 4 or above for Reading?

## ATAR Scores

This is an incomplete cumulative frequency table of ATAR scores for the 80 students at a school. Two percentages are missing from the table.

| ATAR score category | Percentage | Cumulative Percentage |
| :---: | :---: | :---: |
| 90 or above | $12 \%$ | $12 \%$ |
| $80-89.99$ | $17 \%$ | $29 \%$ |
| $70-79.99$ | $20 \%$ | $49 \%$ |
| $60-69.99$ | $27 \%$ | $76 \%$ |
| $50-59.99$ | $11 \%$ | $87 \%$ |
| $40-49.99$ | $9 \%$ |  |
| Less than 40 |  | $100 \%$ |

48. Are the following statements True, False or Not Possible to Determine?

- The median ATAR score is in the range 60-69.99.
- $76 \%$ of the students achieved an ATAR score greater than or equal to 70.
- The highest ATAR score was 95.

49. What is the missing percentage for the Less than 40 category, and the missing cumulative percentage for the 40-49.99 category respectively?

## Grade Point Average

A grade point average (GPA) is the average of all grades achieved throughout a course.

A 4-point GPA scale assigns grade values as follows:
High distinction $=4.0$
Distinction $=3.0$
Credit $=2.0$
Pass $=1.0$

Furthermore, each unit in a course is assigned a number of points which are used to calculate the weighted grade value for each unit:

$$
\text { weighted grade value }=\text { grade value } \times \text { points }
$$

Finally, these weighted grade values are averaged to give the GPA:

$$
\text { GPA }=\text { (total of weighted grade values }) \div \text { (total of points) }
$$

## Example

The calculations for Units 1 and 2, assigned 6 and 12 points respectively, are shown below.
Unit 1: Grade: Distinction, Grade value: 3.0
Points: 6, Weighted grade value: 18.0

Unit 2: Grade: Credit, Grade value: 2.0
Points: 12, Weighted grade value: 24.0

Totals: Points: 18, Weighted grade value: 42.0
GPA: 2.3
50. For the example given, what is the GPA if Unit 1 is assigned 8 points and Unit 2 is assigned 10 points (instead of 6 and 12 points respectively)? Round your answer to one decimal place.
51. For the example given, what is the GPA if a High Distinction (rather than a Distinction) is awarded for Unit 1, and a Distinction (rather than a Credit) is awarded for Unit 2? Round your answer to one decimal place.

## Maya Timeline

52. This table shows the evolution of Maya culture. The terms BCE and CE represent Before Common Era and Common Era respectively.

| Name of period | Time |
| :--- | :---: |
| Early Pre-classic Maya | $1800-900$ BCE |
| Middle Pre-classic Maya | $900-300$ BCE |
| Late Pre-classic Maya | 300 BCE -250 CE |


| Early Classic Maya | $250-600 \mathrm{CE}$ |
| :--- | :---: |
| Late Classic Maya | $600-900 \mathrm{CE}$ |
| Post-classic Maya | $900-1500 \mathrm{CE}$ |
| Colonial Period | $1500-1800 \mathrm{CE}$ |
| Independent Mexico | 1821 to present |

Source: Canadian Museum of History

Are the following statements True or False?

- The total length of the Classic Maya period was less than 1400 years.
- The period from 100 to 300 CE lies entirely within the Late Pre-classic Maya period.
- The Pre-classic Maya period lasted longer than all of the subsequent periods to date.

You have completed Section 1. In the actual test, when you commence Section 2 you will not be able to return to Section 1.

## Section 2: Calculator Not Available

## Healthy Canteens

53. The Healthy School Canteens strategy for one Australian state includes the following guidelines:

- At least $\frac{3}{4}$ of the canteen menu should include Everyday* foods and drinks.
- No more than $\frac{1}{4}$ of the canteen menu should include Occasional* foods and drinks.
* Everyday foods generally have more nutritional value than Occasional foods and drinks.

The canteen of a school in the state has 80 items on the menu. According to the guidelines, what should be the minimum number of Everyday foods and drinks on the canteen menu?

## Student Triathlon

This table shows the distances that competitors swim, cycle and run in an inter-school triathlon event.

| Swim | Cycle | Run |
| :---: | :---: | :---: |
| 50 m | 2 km | 500 m |

54. Are the following statements True or False?

- The swim distance is 0.05 km .
- The length of the cycle is more than 4 times the length of the swim and run combined.

55. This table shows the finishing times of the competitors who came first and second.

| Place | Finishing time (min: sec) |
| :--- | :---: |
| First | $25: 46$ |
| Second | $27: 14$ |

What is the difference between the finishing times of the two competitors?

## Thomas Logan Robertson

56. Thomas Logan Robertson helped to establish the Western Australian Institute of Technology (WAIT), which later became Curtin. He was born on 12 November 1901, and died on 29 August 1969. How old was Thomas Logan Robertson when he died?

## Walking Distance

57. This is a sign at a car park:


Fern Creek and Hippo Gorge are on the same track. What is the distance, in kilometres, from Fern Creek to Hippo Gorge?

## Almonds

58. Ruth is shopping online, and orders 0.6 kg of almonds.


What is the cost of the almonds that Ruth buys?

## Company Budget

59. A company has a three-year development budget as follows:

Year 1: $\$ 400$ million
Year 2: $\$ 600$ million
Year 3: \$1 billion

Are the following statements True or False?

- The Year 2 amount is $150 \%$ of the Year 1 amount.
- The Year 3 amount is more than the total of the Year 1 and Year 2 amounts.


## Bike Club

60. A teacher coordinates a school bike riding club. The club meets twice a week after school as follows:
Mondays: 1 hour 30 minutes
Thursdays: 1 hour 30 minutes
The teacher spends an additional 30 minutes each week on club-related activities.

Assuming third term lasts for 10 weeks and there are no public holidays on Mondays and Thursdays during that time, what is the total number of hours the teacher devotes to the bike club in term 3?

## Stationary Order

61. A teacher orders 1 laser pointer, 6 whiteboard markers and 2 whiteboard erasers:

laser pointer
\$68.95

whiteboard marker
\$3.97

whiteboard eraser
\$1.95

Which method would give the best estimate of the total cost of the stationary?
A. $60+6 \times 4+2$
B. $70+6 \times 3+2 \times 2$
C. $60+6 \times 4+2$
D. $70+6 \times 4+2 \times 2$
E. $70+6 \times 4+2 \times 1$

## Education Expenditure

62. The pie chart shows the percentage of the overall Australian government expenditure on education for each of the four sectors in 2015-16.

Australian Government Expenditure on Education (2015-16)


Education and
Training
7\%
Based on Australian Bureau of Statistics data, 2016

Are the following statements True or False?

- The expenditure on School Education was more than double the expenditure on Higher Education.
- The ratio of expenditure on Preschool Education to expenditure on School Education was 1 to 29 .


## Dance Instructor

63. A physical education teacher wants to hire a dance instructor to conduct some classes. The dance instructor charges $\$ 220$ for each class. However, when 3 classes are booked at the same time, a $10 \%$ discount off the total cost applies. What is the cost of three classes when booked at the same time?

## School Sector

In 2017, there were 413708 students enrolled in 1088 schools in Western Australia. Approximately two-thirds of the students were enrolled in Government schools.
64. Which of these values is closest to the number of children enrolled in Government schools in 2017 in Western Australia?
A. 200000
B. 220000
C. 250000
D. 275000
E. 300000
65. In 2017, there were approximately twice as many Government schools as non-Government schools in Western Australia. Which value is closest to the number of Government schools in Western Australia in 2017?
A. 500
B. 640
C. 720
D. 800
E. 850

## SOLUTIONS

1. $\$ 590$
2. E
3. \$500
4. True, False, True
5. E
6. \$2
7. 800 m
8. 45
9. False, False
10. True, False, False, True
11. False, True, False, True

12a. 45 games
b. 9 rounds of games
c. 30 minutes per round of games.
13. Team 2
14. 64
15. 31.47\%
16. False, True, False
17. Class B
18. Class E
19. True, False
20. \$301.48
21.4
22. 169000
23. $\$ 228.50$
24. True, Not Possible to Determine
25. \$140
26. C
27. True, False, True
28.6 .93 kg
29. 16
30. False, True, False

31a. Terracotta
b. Lime

32a. 2 teaspoons
b. 25 teaspoons
33. False, True, True
34. C
35. 5:20pm
36. True, False
37. 9143
38. \$825
39. 68
40. True, False
41. D
42. 6, \$149.70
43. 33.25L
44. D
45. False, True
46. E
47. 2
48. True, False, Not Possible to Determine
49. 4\%, 96\%
50. 2.4
51. 3.3
52. True, False, True
53. 60
54. True, False
55. 1:28
56. 67
57. 3.7 km
58. \$12.00
59. True, False
60.35 hours
61. D
62. False, True
63. \$594
64. D
65. C

