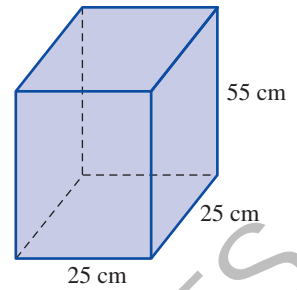
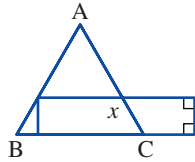


7. You have a rectangular storage box that is 55 cm high. You cut off a 5-cm strip around the top of the box. What will be the new volume of the box in cubic centimetres?

- A. $31\,250\text{ cm}^3$ B. $27\,500\text{ cm}^3$
 C. $22\,000\text{ cm}^3$ D. $20\,000\text{ cm}^3$



8. Triangle ABC is equilateral. What is the measure of angle x ?



9. A shop reduces the price of sports shoes by 40%. The new price is \$72. What was the original price of the sports shoes?

- A. \$120 B. \$115.20 C. \$100.80 D. \$100



10. High-speed label applicators can put labels onto envelopes at a rate of 200 per second. Which of the following represents the number in a day:

- A. 1.728×10^5 B. 1.728×10^6 C. 1.728×10^7 D. 1.728×10^8

SALE 40% OFF

11. Alex and his six friends played a game of laser tag in which the person with the lowest final score wins. The table shows the final scores for each person except Alice.

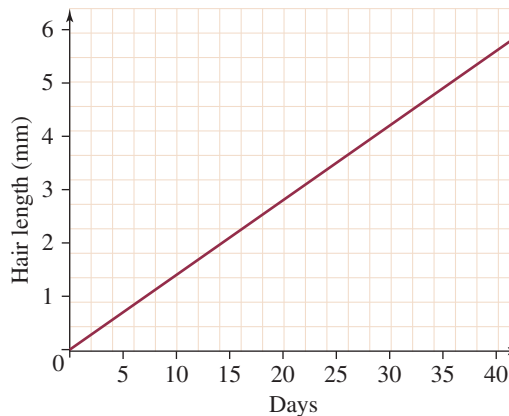
Player	Score
Alex	151
Ben	153
Julie	149
Lee	139
Alice	
Aysha	135
Keta	143



If Alice won the game and the range was 19, what was Alice's score?

- A. 132 B. 134 C. 170 D. 172

12. The following graph shows the growth rate of hair.



Based on the information in the graph, which figure best represents the number of millimetres that hair grows in 30 days?

- A. 2.4 mm B. 3.6 mm C. 4.2 mm D. 5.7 mm

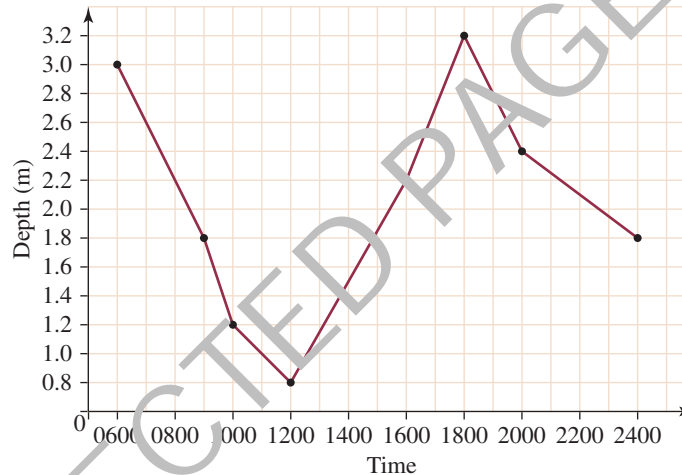
13. A Frisbee fits inside a cube. The top of the cube has a perimeter of 72 cm. If the Frisbee occupies 250 cm^3 , how much space is left in the box?
14. You are hanging towels on a clothes line. You use two pegs per towel.



However, as you continue you realise that you will run out of pegs. Instead, you attach the end of the new towel to the old towel. In this way the towels share a peg.

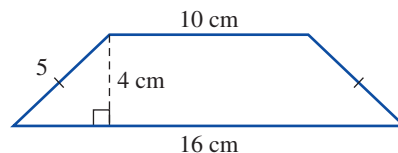
If t represents the number of towels and P represents the number of pegs, which of these equations represents the number of pegs needed?

- A. $P = 2 \times t + 1$ B. $P = 2 \times t + 2$ C. $P = 3 \times t$ D. $P = t + 1$
15. A cyclist is competing in an 80-km race. The record time for the race is 2 hours and 40 minutes. What will his speed, s (in km/h), need to be to beat this record?
- A. $s < 30$ B. $s > 30$ C. $s < 33$ D. $s > 20$
16. The depth of the water inside Blue Lagoon Bay has been recorded over a time period as shown on the following graph.



What is the depth at 10 pm?

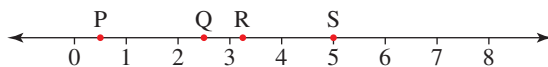
17. Sing and Nam each buy a health bar at lunchtime from the vending machine. There are four different types to choose from: ANZAC, chocolate chip, triple fruit and yoghurt. What is the probability that they choose exactly the same type of bar?
18. A triangle with two identical sides and an angle of 119° is:
- A. scalene and acute B. isosceles and acute
C. isosceles and obtuse D. isosceles and right-angled
19. Alex wants to find the perimeter of the following isosceles trapezium.



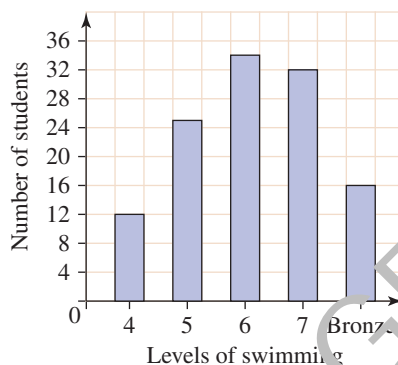
Which equation could Alex use to find the perimeter of the trapezoid?

- A. $P = 10 + 16 + 4 + 5$ B. $P = 10 + 16 + (2 \times 5)$
C. $P = 10 + 16 + 4 + 5$ D. $P = (10 + 16) \times 4 + 2$

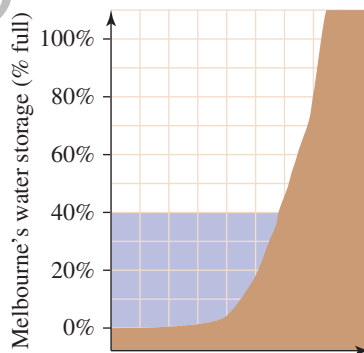
20. Which point on the number line could represent the value of $\sqrt{10}$?



- A. S B. P C. R D. Q
21. Lightning quickly heats the air, causing it to expand. This produces the sound of thunder. Sound travels approximately 1 km in 3 seconds. How far away is a thunderstorm when you notice a 2-second delay between the lightning and the sound of thunder?
- A. 1 km away B. $\frac{1}{3}$ km away C. $\frac{1}{2}$ km away D. $\frac{2}{3}$ km away



22. The bar graph shows 120 students in Year 8 and their different swimming levels. What percentage of students, to the nearest whole number, have reached the bronze level?
- A. 13% B. 15% C. 17% D. 19%
23. A reservoir has a total capacity of 1068000 megalitres. Suppose the water is to be drained by a pump at a constant daily rate. If $\frac{9}{10}$ of the volume of the reservoir remains after the first day's pumping, how many megalitres (to the nearest megalitre) have been lost over 3 days? (Round to the nearest megalitre.)
- A. 772740 B. 320490 C. 289428 D. 1068
24. The following diagram shows the current storage level of a dam.



If the total capacity is 1670500 megalitres, how much water is available (to the nearest ten thousand megalitres)?

- A. 700000 B. 670000 C. 669000 D. 660000
25. One student in the Japanese class is to make name tags, 50 mm \times 50 mm square, from stiff card. The sheet of card measures 25 cm by 30 cm. What is the maximum number of name tags that can be made from one sheet?
- A. 10 B. 20 C. 30 D. 40

26. The table shows the cost of hiring a band called The Hotshots.

The Hotshots band for hire	
Monday to Friday	\$55 per hour
Saturday	\$110 per hour
Acoustic Rental	\$60 per booking
Deposit 20% of total cost	

A booking is made for Saturday for 4 hours, along with acoustic rental. Which of the following represents the deposit?

- A. $(110 \times 4 + 60) \times \frac{20}{100}$ B. $(110 \times 4 + 60) \times \frac{100}{20}$
 C. $(110 + 60) \times 4 \times \frac{20}{100}$ D. $(110 + 60) \times 4 \times \frac{100}{20}$
27. The Queenscliff Marine Centre hires a boat for 12 biologists to go diving for six days. The cost for hiring the boat for six days is usually \$880. The marine centre obtains a 10% discount. What is the cost per person with the discount?
 A. \$88 B. \$74 C. \$70 D. \$66
28. The manager of a cinema complex records the number of people attending the 2pm session at the cinema from Monday to Friday.

	Monday	Tuesday	Wednesday	Thursday	Friday
Number of adults	120	170	147	160	183
Number of children	37	42	52	62	85

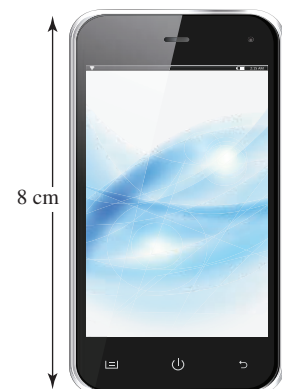
What is the mean number of adults attending the 2pm session for that week?

- A. 120 B. 150 C. 156 D. 160
30. Two cars begin at the same time and travel the same distance of 160 km. One car travels at 80 km per hour and the other car travels at 100 km per hour. How many minutes after the faster car will the slower car complete the journey?
 A. 20 minutes B. 24 minutes C. 30 minutes D. 36 minutes
31. You can usually stay in the sun for 9 minutes before burning. Using a sun protecting lotion with an SPF 20 rating means that you can stay in the sun for 9×20 minutes before burning. Your friend burns in 15 minutes. What sun protection factor would she need to use so that you can both stay for the same amount of time out in the sun? (Of course remember to wear a hat!)
 A. 8 B. 10 C. 12 D. 15

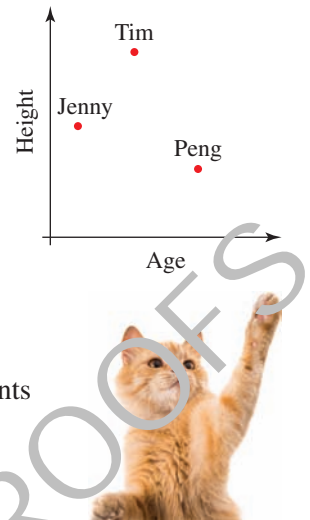
1.3 Set B

1.3.1 Non-calculator

1. The height of the rectangular phone screen shown is 8 cm, and its area is 80 cm^2 . The perimeter of the screen is:
 A. 32 cm B. 36 cm
 C. 38 cm D. 40 cm
2. The sum of $3x$ dollars and $3x$ cents, in cents, is:
 A. $3x + 3$ B. $3x$
 C. $303x$ D. $3x + 3x$



3. The following graph shows the ages and heights of three Year 8 students. Which one of the following statements is true?



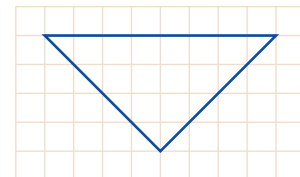
- A.** Tim is the eldest and the tallest.
B. Jenny is older than Peng and younger than Tim.
C. Peng and Tim are the same age.
D. Peng is the shortest.
4. Two angles of a triangle are 63° and 57° . Which of the following could not be the measure of an exterior angle of the triangle?
A. 110° **B.** 117°
C. 120° **D.** 123°
5. Susan claims that the weight of her cat is at most 8 kg. What inequality represents her claim?
A. $w < 8$ **B.** $w > 8$
C. $w \leq 8$ **D.** $w \geq 8$
6. The following diagram shows two parallel streets, Yarra Street and Myers Street, intersected by Moolap St. The obtuse angle that Myers Street forms with Moolap Street is four times the measure of the acute angle that Yarra Street makes with Moolap Street. What is the measure of the acute angle at Yarra Street and Moolap Street?
A. 30° **B.** 36° **C.** 108° **D.** 144°
7. Ann and Jack are playing a game where Ann gives an Input number for Jack to put in to the same expression to give an Output number.

Input	1	2	3	4	?
Output	2	5	8	11	59

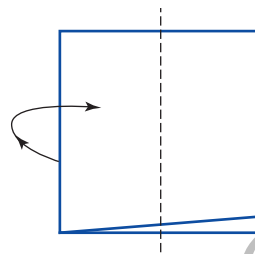
- What is the Input number that Ann gave Jack for an Output number of 59?
A. 18 **B.** 20 **C.** 22 **D.** 24
8. Five students competed in a 200-m race. Their finishing times were 47.5 s, 46.8 s, 47.3 s, 48.0 s and 48.2 s. What is their average time for running a 200-m race, correct to 2 decimal places?



9. A triangle has been drawn on 1-cm grid paper. Which statement is incorrect?
A. The triangle is isosceles.
B. The triangle is right-angled.
C. The perimeter is 24 cm.
D. The area is 16 cm^2 .

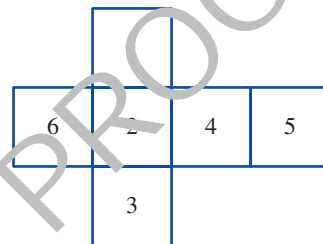


10. Fold a paper square in half vertically and then cut it along the fold line. What is the ratio of the perimeter of one of the resulting two smaller rectangles to the large square?



- A. $\frac{1}{2}$
- B. $\frac{2}{3}$
- C. $\frac{3}{4}$
- D. $\frac{5}{6}$

11. Imagine that you fold the figure shown into a cube. Three faces meet at each corner. What is the largest sum of the three numbers whose faces meet at a corner?



- A. 15
- B. 14
- C. 13
- D. 12

12. Anne has to put 2 drops from an eyedropper in her eye twice a day. If the bottle of eye drops contains 20 mL and there are 8 drops in a millilitre, how many days will the bottle of eye drops last?



- A. 10 days
- B. 20 days
- C. 30 days
- D. 40 days

13. Two hundred Year 8 students are doing a science experiment in which 25 mL of an alkaline solution will be used by each student. How much solution is needed in total?

- A. 50 litres
- B. 5 litres
- C. 0.5 litres
- D. 0.05 litres

14. You have made 15 muffins for your class. You realise that this is only $\frac{3}{5}$ of the total that you need. How many more do you need to make?



- A. 3
- B. 5
- C. 9
- D. 10

15. A market gardener noted that 6 boxes of cherry tomatoes and 2 kg weighed the same amount as 5 boxes of cherry tomatoes and 4 kg. If x represents the weight of a box of cherry tomatoes in kg, which equation best represents the information?



- A. $8x = 9x$
- B. $12x = 20x$
- C. $6x + 2 = 5x + 4$
- D. $6x - 2 = 5x + 4$

16. Mulching the garden in the summertime is a great way of saving water. A bale of pea straw costs \$5.00 and the delivery charge is \$15.00. Olivia spent \$90 in total. How many bales of pea straw did she buy for the garden?

- A. 18 C. 12
 B. 15 D. 9

17. In Yen's class, the ratio of the number of students who walked to school on Tuesday to the number of students who took some form of transport was 12:18. Which fraction is an equivalent form of this ratio?

- A. $\frac{2}{8}$ B. $\frac{4}{9}$
 C. $\frac{2}{3}$ D. $\frac{3}{4}$

18. The Cheetahs and the Leopards are two school netball teams. The table shows the scores of their games.

	Game 1	Game 2	Game 3	Game 4	Game 5
Cheetahs	45	40	35	49	64
Leopards	28	50	27	52	63

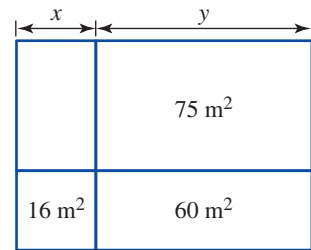
Based on the scores in the table, which statement is true?

- A. The Cheetahs won 20% of the games. B. The Cheetahs won 30% of the games.
 C. The Leopards won 40% of the games. D. The Leopards won 60% of the games.

19. The following is a diagram of a proposed floor plan for an office space. The proposed plan has four areas. Three of the areas are rectangular and the fourth is a square.

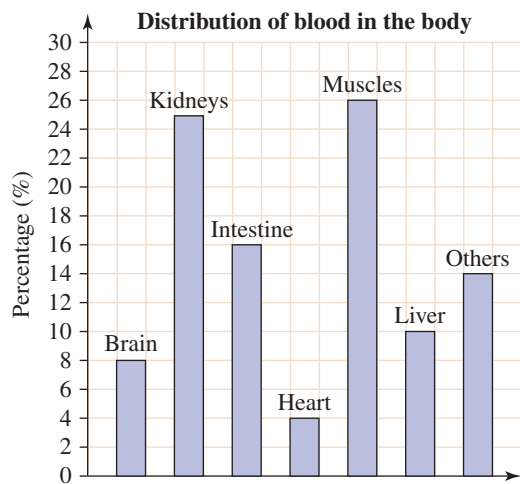
What is the length of y?

- A. 3 m B. 5 m
 C. 15 m D. 25 m



20. Adults, on average, have 5.5 litres of blood in their bodies. How many millilitres of blood are in the kidneys?

- A. 25
 B. 500
 C. 1000
 D. 1375



21. Anne and her friends decided to watch a DVD. They started it at 8.30 pm and it ran for 105 minutes. At what time did the DVD end?

- A. 9.30 pm B. 9.35 pm
 C. 10.05 pm D. 10.15 pm

22. A 900-car parking lot is divided into 3 sections. There are 330 spots in Section 1. Section 2 holds 160 more than will fit into Section 3. How many spots are in Section 3?

23. A chef assembles a cake in $\frac{2}{3}$ of an hour. If he works for $7\frac{1}{2}$ hours, how many cakes will he fully assemble?

- A. $10\frac{3}{4}$ B. 11 C. $11\frac{1}{4}$ D. 12



24. A roll of material contains 6 metres of cloth. Four lengths, each of x centimetres, are cut from the cloth. What length of material (in centimetres) remains?

- A. $6 - 4x$
- B. $4x - 6$
- C. $600 - 4x$
- D. $100(6 - 4x)$



25. Two roads cross. What is the size of angle A ?



26. A survey is taken of a Year 8 group to determine the length of time students spend on homework each night. What percentage of the group spend 60 minutes or more on homework each night?

Time spent in minutes	Number of pupils
0	6
15	10
30	14
40	2
50	4
60	8
70	10
80	5
90	1

27. In this diagram of yellow and blue buckets, each bucket of the same colour contains the same number of pegs. How many pegs are in each of the given coloured buckets?



Total number of pegs in 4 yellow buckets = 28 pegs

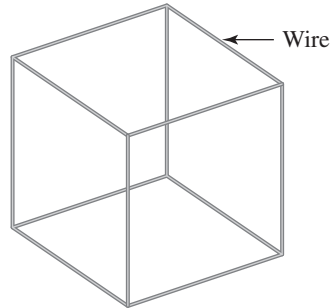


Total number of pegs in 1 yellow bucket and 2 blue buckets = 43 pegs

28. Which of these is the lightest?

- A. 25 000 grams B. 2.50 kilograms C. 25 000 000 milligrams D. 2.5 tonnes

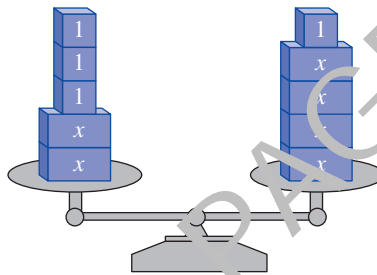
29. A piece of wire is cut into the exact number of pieces needed to create the edges of a cube. If the volume of the cube is 125 cm^3 , what was the length of wire to begin with?



- A. 5 cm B. 30 cm C. 50 cm D. 60 cm

30. Given the balance, what is the value for x ?

- A. $\frac{1}{2}$ B. 1 C. 2 D. 4



Answers

Topic 1 Numeracy 1

Exercise 1.2 Set A

1.2.1 Calculator allowed

- | | | | |
|-------------------------|-------------------------|-------|---------------------|
| 1. D | 2. D | 3. B | 4. A |
| 5. B | 6. 31.25 cm^2 | 7. A | 8. 120° |
| 9. A | 10. C | 11. B | 12. C |
| 13. 5582 cm^3 | 14. D | 15. B | 16. 2.1 m |
| 17. $\frac{1}{4}$ | 18. C | 19. B | 20. C |
| 21. D | 22. A | 23. B | 24. B |
| 25. C | 26. A | 27. D | 28. C |
| 29. B | 30. C | | |

Exercise 1.3 Set B

1.3.1 Non-calculator

- | | | | |
|--|---------|-------|----------------------|
| 1. B | 2. C | 3. D | 4. A |
| 5. C | 6. B | 7. B | 8. 47.56 s |
| 9. C | 10. C | 11. B | 12. D |
| 13. B | 14. D | 15. C | 16. B |
| 17. C | 18. C | 19. C | 20. D |
| 21. D | 22. 205 | 23. B | 24. C |
| 25. 107° | 26. 40% | | |
| 27. 7 pegs in each yellow bucket; 18 pegs in each blue bucket. | | | |
| 28. B | 29. D | 30. B | |