Carlingford High School

PW Part A Q1-5
AS Part A Q6-Part B Q
GT Part B Q4-8
AG Part C Q1-7
KC Part C Q8-P

Mathematics

Year 7 Term 4 Examination

2020

Name: Soln Class: 7 ___

Circle your teacher's name: Mrs Lobejko/Mrs Lego Mr Cheng
Mrs Wilson/Mrs Young Mrs Virmani
Mrs Blakeley/Mrs Sharma Mrs Tang
Mr Gong/Mrs Virmani Mr Wilson

Time allowed: 50 minutes

- Show all necessary working.
- Marks may be deducted for careless or untidy work.
- Complete the examination in blue or black pen.
- Calculators may be used.

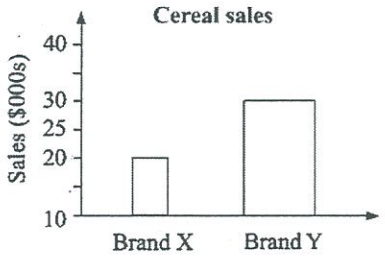
Topic	Data	Time	Measurement	Problem Solving	Total
Total	/21	/20	/23	/6	/70

PW

PW

Section A: Data (21 marks)

1. The graph below is of two brands of Cereal.



The graph is misleading because:

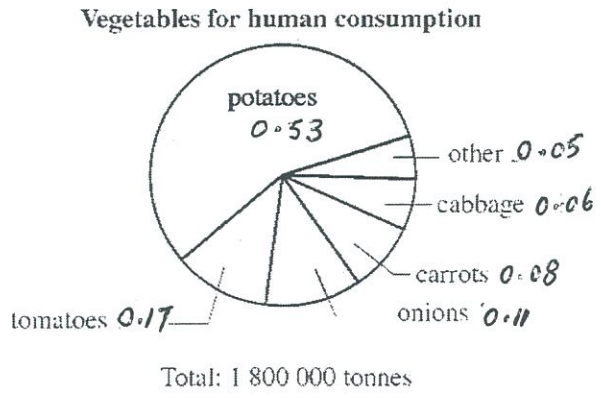
A. the columns are not the same width

B. the vertical scale is uneven

C. the vertical scale doesn't start at zero

(D.) both A and C

2.



Total: 1 800 000 tonnes

The sector graph represents types of vegetables grown for human consumption in Australia.

i) Which vegetable is grown the most?

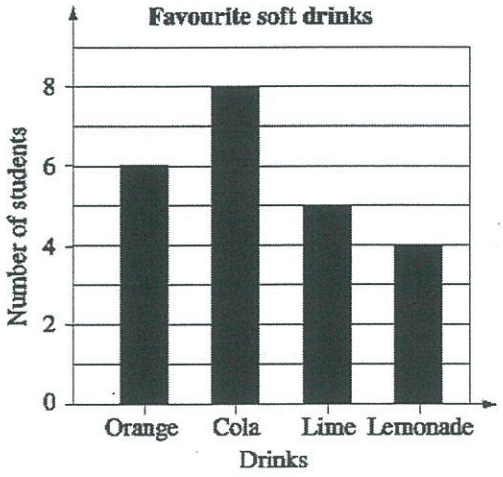
potatoes

ii) How many tonnes of cabbage were grown? [2]

0.06 × 18 00 000 (1)

= 108000 tonnes (1)

3. Some students were asked to state their favourite soft drink. The results are displayed in the column graph below.



i) Which is the most popular drink?

Cola

ii) How many students preferred **Lime?**

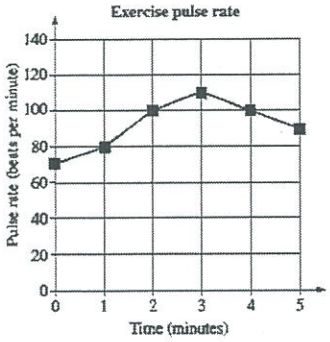
5

iii) How many more students preferred Cola than Lemonade?

8 - 4 = 4

PW

4.



The line graph above shows the pulse rate of a Year 7 student doing aerobics, measured after each minute.

i) What was the pulse rate after 2 minutes?

100

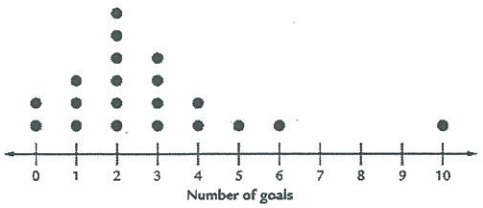
ii) When was the pulse rate highest?

3 minutes

iii) What was the range of pulse rates?

110 − 70 = 40

5. The number of goals per game scored by a hockey team during the season is shown in the dot plot below.



i) How many games were played?

20

ii) In how many games were 3 goals scored?

4

iii) What was the outlier?

10

AS

6. The number of points per game scored by a basketball team over a season were recorded.

84 ~~32~~ ~~57~~ 81 ~~40~~ ~~56~~ ~~44~~
~~59~~ ~~48~~ ~~57~~ ~~58~~ ~~62~~ 82 ~~72~~

i) Draw an ordered Stem-and-Leaf plot for the data. [2]

Stem	Leaf
3	2
4	0 4 8
5	6 7 7 8 9
6	2
7	2
8	1 2 4

-1 each mistake

ii) On which stem were most of the points clustered?

5 or 50's

iii) In how many games were more than 60 points scored?

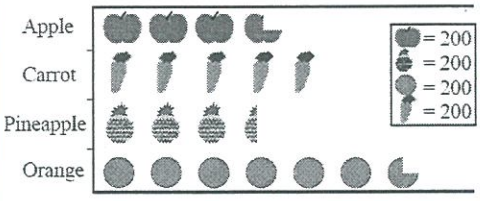
5

iv) What was the most frequent number of points per game?

57

7.

Average Monthly Juice Sales (glass)



i) What type of graph is shown in this question?

pictograph or picture graph.

ii) What does ◔ represent?

150 oranges (must have oranges)

iii) Name and give sales figures for the least popular juice.

Pineapple, 700 glasses

Section B: Time (20 marks)

1. Convert 1535 to 12-hour time.

   A. 5:35 pm (B.) 3:35 pm
   C. 5:35 am D. 3:35 am

2. Complete the following:

i) 120 *min* = 7200 *sec*

ii) 3.5 *days* = 84 *h*

iii) 375 min = 6 *h* 15 min

3. Write these times as they would appear on a 24-hour clock.

ii) 10 minutes past 5 in the afternoon

1710

iii) 12 noon

1200

4. i)
$$\begin{array}{r} 2\,h\ 15\,min \\ +\,4\,h\ 32\,min \\ \hline \end{array}$$
6h 47min

ii)
$$\begin{array}{r} 4\,h\ 10\,min \\ -\,1\,h\ 12\,min \\ \hline \end{array}$$
2h 58min

5. Elizabeth and Philip get 1 h and 24 min of homework each weekday.

Elizabeth takes 5 minutes less to do her homework on a Tuesday, and 5 minutes less each subsequent day up to and including Friday.

i) How long does Philip spend on homework each week?

1h 24min × 5
= 7 hours

ii) How much time does Elizabeth spend doing her homework each week?

1h 24min + 1h 19min +
1h 14min + 1h 9min + 1h 4min

= 6h 10mins

iii) How much more spare time does Elizabeth get than Philip each week?

7h − 6h 10mins
= 50 mins

6. Luke's football team starts its game at 10:15 am. The team plays two halves that are 25 minutes each and there is a 6 minute break at half time.

i) Luke scores a goal 5 minutes after half time. At what time does he score his goal?

10:51 am

ii) At what time does the game finish?

10:15 + 50 min + 6 min
= 11:11 am

GT

7. The timetable shows the TV programs on the ABC for one day. [4]

TWO

6.00	Open Learning	5.00	Hey Arnold! (R)	9.00	Speaking Personally: Shane Dye (Final)
7.30	Mixy	5.25	The Trap Door (R)	9.30	The Big Picture: The 50 Years War Pt 6 – Israel And The Arabs (Final, S)
10.00	Children's Programs	5.30	Alex Mack		
12.00	World At Noon	5.55	Once Upon a Time (R)		
12.30	Lateline (R)	6.00	Heartbreak High (R)		
1.00	Bowls	6.30	As Time Goes By (R, S)	10.25	News (S)
3.00	Sesame Street	7.00	News (S)	10.30	Lateline
3.55	Bananas in PJs (R)	7.30	The 7.30 Report (S)	11.05	Heartbeat (PG, R, S)
4.00	Play School (R)	8.00	Quantum	12.00	Australia TV News
4.30	Babar (R)	8.30	Australian Story: Searching For The Man	12.30	Move: Hamlet (b/w, 48, R)
4.55	William (R)			3.00	Open Learning (R, S)

i) At what time do the following programs begin?

Once Upon a Time 5:55 pm (must have pm) Hamlet 12:30 am (must have am)

ii) How long does the program Play School run for? ½ hour

iii) Mrs Lego has just finished watching Sesame Street. How long does she have to wait to watch Hey Arnold?

1h 5 mins

8. Below is a timetable for the Blacktown-Seven Hills bus route. [3]

BUS TIMETABLE

MONDAY TO FRIDAY

• ROUTE 718 • BLACKTOWN TO SEVEN HILLS

DEPARTS	ARRIVES	ARRIVES	ARRIVES	ARRIVES	ARRIVES
Blacktown Station	Cnr Vandys Rd and Garden St	Kings Langley Shops	Lalor Park School	Cnr Kennedy Pde and Burke Rd	Seven Hills Station
2:38 B	2:47	2:52	2:58	3:01	3:04
3:20	3:29	3:34	3:40	3:43	3:46
3:48	3:57	4:02	4:08	4:11	4:14
4:10	4:19	4:24	4:30	4:33	4:36
4:35	4:44	4:49	4:55	4:58	5:01
5:08	5:17	5:22	5:28	5:31	5:34

B – On school days, diverts to Blacktown High School

i) At what time does the bus that leaves Blacktown Station at 2:38 arrive at Seven Hills Station?

3:04 pm

ii) If the bus is 8 minutes late at what time would the school bus reach the Kings Langley shops?

3 pm or 3 o'clock.

iii) Mr Wilson leaves his home on Vardys Road at 3:45 pm and takes 9 minutes to walk to the bus stop. At what time could he expect to reach Seven Hills Station?

3:54 pm

AG

Section C: Measurement (23 marks)

1. Complete the following: [4]

i) $42\ cm$ = 420 mm

ii) $5.8\ t$ = 5800 kg

iii) $720\ mL$ = 0.72 L

iv) $82\ 000\ m^2$ = 8.2 ha

2. Which of the following is the largest?

6.5 m^2 82 000 cm^2 25 050 000 mm^2

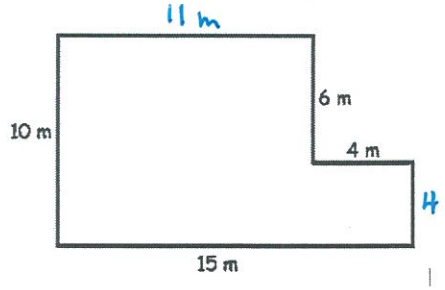
3. Josephine jogged 980 m to the local swimming pool and then decided to swim 1.5 km. What was the total distance in metres that she covered in her exercise program. [1]

980 + 1500 = 2480 m

or 2.48 km

must have units

4. Find the perimeter of the figure below. [2]

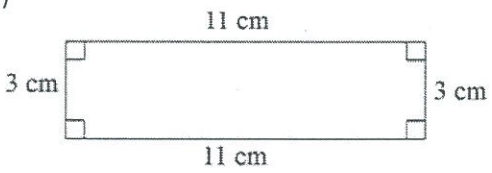


11 + 10 + 6 + 4 + 4 + 15

= 50 m

5. Find the area of the following figures.

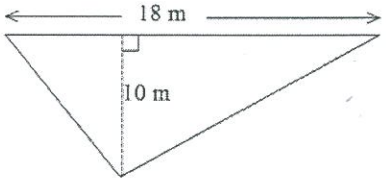
i)



A = 11 × 3

= 33 cm^2

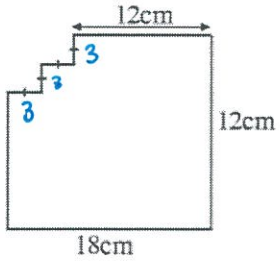
ii) [2]



A = $\frac{1}{2}$ × 10 × 18 (1)

= 90 m^2 (1)

iii) [2]



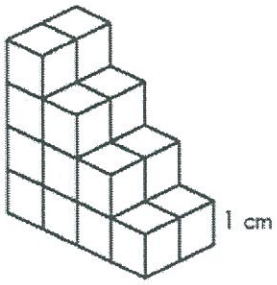
A = (18 × 12) − 3(3 × 3) (1)

= 189 cm^2 (1)

AG

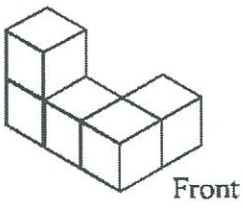
KC

6. Determine the volume of the solid below. (Assume no cubes are missing in the back row.)

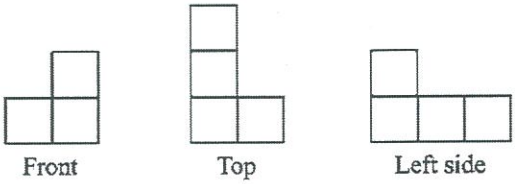


$20\,cm^3$

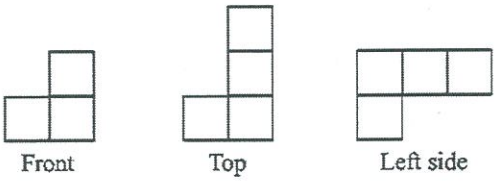
7. Which of the following are the views of the solid drawn below.



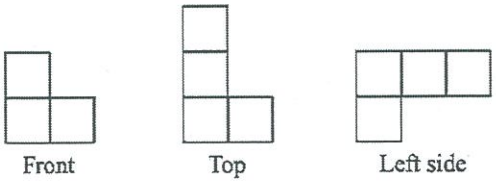
A.



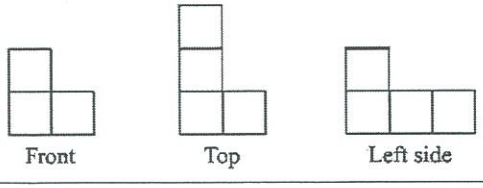
B.



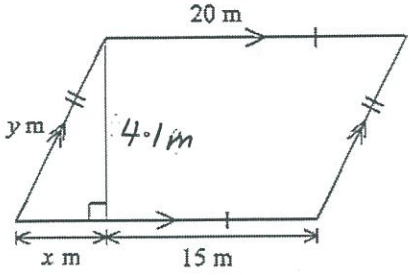
C.



D.



8. The parallelogram below has a perimeter of 70 m.



i) Find the value of x.

$5\ m$

ii) Find the value of y.

$$y = \frac{70 - 2 \times 20}{2}$$

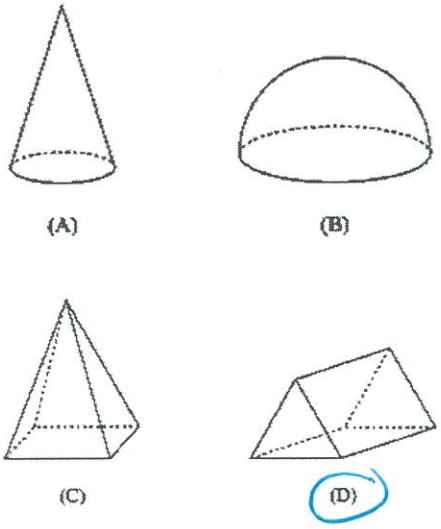
$$= 15\ m$$

iii) Find the area of the parallelogram.

$$A = 4.1 \times 20$$

$$= 82\ m^2$$

9. Which of the solids shown below is a prism?



KC

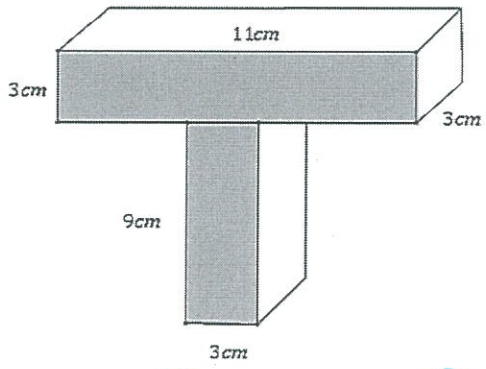
10. How many 300 mL mugs could be filled completely from a 2L kettle? [2]

$2000 \div 300 = 6.66...$ (1)

$\therefore$ 6 mugs (1)

Do not accept 6.66... or 7 mugs.

11. Find the volume of the solid below. [2]



(1) (1)

$V = (3 \times 11 \times 3) + (9 \times 3 \times 3)$

$= 180 \text{ cm}^3$

KC

Problem Solving: (2 marks each). Show your working for full marks.

1. *Numbers that follow each other continuously in the order from smallest to largest are called consecutive numbers.*

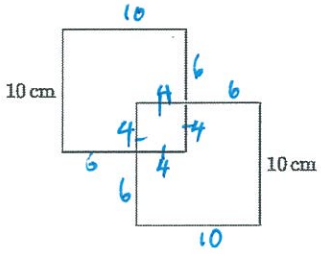
Consecutive numbers are written on five separate cards, one on each card. If the sum of the smallest three numbers is 60, what is the sum of the largest three numbers?

3 smallest numbers are 19 20 21 22 23

Sum of 3 largest numbers = 21 + 22 + 23

= 66

2. These two squares, each with a side length of 10 cm, overlap as shown in the diagram. The shape of the overlap is also a square which has an area of 16 square centimetres.



What is the perimeter of the combined shape?

10 + 6 + 6 + 10 + 10 + 6 + 10 + 6

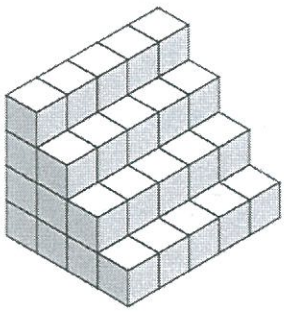
= 64 cm

3.

A cube is made up of 1 cm × 1 cm × 1 cm blocks and measures 12 cm × 12 cm × 12 cm. Sharyn is using the same set of blocks to make a set of stairs.

The picture shows how she started, making a set of stairs 4 blocks high, 4 blocks from front to back and 5 blocks wide.

Her finished set of stairs will use all the blocks and be 8 blocks high and 8 blocks from front to back. How many blocks wide will they be?



End of staircase has 8 + 7 + ... + 2 + 1 = 36 blocks

Available blocks = 12 × 12 × 12

$$\frac{12 \times 12 \times 12}{36} = 48 \text{ blocks.}$$