### **Carlingford High School**



## **Mathematics**

# Year 7 Term 3 Examination 2019

Name: Sample Solutions + Marking Criteria Class: 7\_\_\_\_

#### Time allowed: 50 minutes

- Show all necessary working.
- Answer all questions in the spaces provided.
- Marks may be deducted for careless or untidy work.
- Complete the exam in blue or black pen.
- Calculators are not allowed.

Topic	Decimals	Time	Algebra	Problem Solving	Total
Mark	/ 24	/ 20	/24	/2	/ 70

#### <u>Decimals</u>

[1]

- 1) Complete the following sentence:
  - A <u>terminating</u> decimal has a finite number of decimal places.
- 2) For the number 10.047:
  - a) Write the number of decimal places
    - 3 🗸
  - b) Write the place value of 4 [1] hundredthsv
  - c) Round to two decimal places [1]
- 3) Arrange the following numbers in ascending order: 2.055, 2.505, 0.255, 2.05 [2]
- 0.255, 2.05, 2.055, 2.505 must be first

- [1] 4) Convert:
  - a)  $\frac{16}{100}$  into a decimal [1]
    - b)  $\frac{4}{11}$  into a decimal, using dot notation [2] 0.3636...

- c) 0.9 into a simplified fraction [1]  $= \frac{9}{10} \checkmark$
- d) 27.025 into a simplified fraction [2]  $= 27 \frac{25}{1000}$   $= 27 \frac{1}{40}$

- 5) Evaluate the following:
  - a)  $3.12 \times 1000$

= 3120/

**b)**  $14.83 \div 100$ - 0.1483

c)  $7.26 \times 4.2$ 

veridence of lit correct multiplication (value) a) value of decimal point

= 30.490

d) 11.92 ÷ 8

1.49
11.392 Veridence of cornect division (values)

of decimal point = 15) 3995

6) Tom bought 15 metres of fabric at \$6.29 per metre.

a) What was the total cost of the fabric?

[1]

[1]

[2]

[2]

veridence of correct multiplication verrect unit & placeme of decimal point = \$94.35

b) How much change would Tom receive if he paid with a \$100 note? [1]

7) A farmer has four dairy cows. In one day, the first cow produced 10.95 litres of milk, the second cow produced 11.587 litres, the third cow produced 9.6 litres, and the fourth cow produced 7.013 litres.

How many litres of milk were produced by the four cows that day? [1]

10.95 + 11.587

b) The milk is poured into containers that each hold 0.15 litres. How many full containers will there be?

0.15) 39.15

V decimal point mov twice in both divider

correct division

.: 261 full containers

#### Time

1) Which of the following words has a different meaning when spelled the same but pronounced differently?

Dav

Hour

Minute

2) Convert the following:

a) 
$$3 \min = 180$$
 s

[1]

**b)** 21 days = 3 week(s)

[1]

[1]

c) 18 months = 1.5 year(s)

d)  $340 \, \text{min} = \frac{5}{5} \, \text{h} \, \frac{40}{5} \, \text{min}$ [1]

3) Round to the nearest minute:

a) 25.21 min

[1]

25 min

**b)** 6 h 13 min 48 s

[1]

[1]

[1]

6h 14 min

- 4) Convert:
  - a) 7:36 am into 24-hour time.

0736

b) 2152 into 12-hour time.

9:52 pm

5) What is the time 3 hours and 12 minutes after 10:26 am? [2]

10: 26am 1:26pm 1:38pm

: 1:38pm Voorrect 1:38

6) Jason was born on 18 July 1998. How old, in years and months, is he on 18 March 2015? Ignore leap

days. 8 months 16 years [2]
18 Jul 1998 18 mar 1999 18 march 2015

: 16 years 8 months

- 7) Use the Train Timetable provided on page 9 to answer the following questions:
  - a) If Teresa wants to be in Wondabyne by 12:55pm, at what time is the latest train that she should catch from Wynyard? [1]

11:34am

b) How long, in hours and minutes, does the 10:47 am train from Central take to arrive at Wyong? [2]

10:47am 11:00am 12:00pm 12:29pm

= 1hr + 13min + 29 min = 1 hr 42 min /

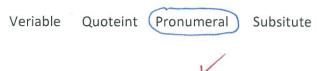
- 8) Use the Australian time zone maps provided on page 9 to answer the following questions:
  - a) When Australian Daylight Savings Time applies, what time is it in Alice Springs when it is 7 am in Canberra?

$$7am - 1\frac{1}{2}hr$$
  
= 5:30 am  $\sqrt{\phantom{a}}$ 

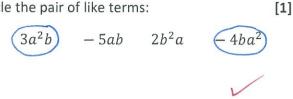
b) In August I will fly from Hobart to Perth. The flight departs on Friday at 10:20 pm and the flight duration is 4.25 hours. At what time will I arrive in Perth (in Perth time)? [3]

#### Algebra

1) Circle the correctly spelled word: [1]



2) Circle the pair of like terms:



- 3) If n represents a number, write a simplified algebraic expression for: [1 Mark Each]
  - a) The sum of the number and 7

$$n+7$$

b) Triple the number

c) Half the difference between 11 and the number

$$\frac{11-n}{2}$$

$$\left(\text{or }\frac{N-11}{2}\right)$$

- 4) Simplify:
  - a) h + h + h + h

4h V

- b) 9k − k8k
- c)  $4n \times 3m$

12mn/

- d)  $7r \times 2r$
- e) 8a ÷ 2 4a ✓
- f)  $\frac{4x^2y}{6xy}$   $\frac{2}{3}$
- g) 5pq 2p 7p + 6pq |pq qp|

5) Expand and simplify:

[1]

[1]

[1]

[1]

[1]

[2]

[2]

a) 3(y+5) [1] 3y+15

- b) 6(x-4) [1] 6x-24
- c) 10z (3 + 2z) [2] = |0z - 3 - 2z|= 8z - 3
- 6) If x = 2, y = 3 and z = -1, evaluate:
- a) y-8 [1] 3-8 = -5
- b) 2y + x [1]  $2 \times 3 + 2$  = 6 + 2 = 8
- c) y(x-z) [2] 3(2-(-1)) = 3(2+1) = 3(3)= 9
- d)  $\frac{z^2 y}{x}$  [2]  $\frac{(-1)^2 3}{2} = \frac{1 3}{2} = \frac{-2}{2} = -$

#### **Problem Solving (1 Mark Each)**

1) What is the sum of the first 2813 digits of the number  $\frac{28}{13}$  when it is written as a decimal?

First digit is 2 : 2813-1 = 2812 digits remaining

The pattern 153846 has 6 digits and will repeat 2812 = 6 = 468 times with 4 remainder.

$$2 + \left[468 \times (1+5+3+8+4+6)\right] + 1+5+3+8$$

2) Write all the two-digit numbers that satisfy the following:

In a two-digit number, if you add three times the tens digit to the units digit, then add this to the product of the digits, you get back to the original number.

so the number is 
$$10x + y$$
.

and 
$$3x+y+xy=10x+y$$

Guess & check for y

Try 
$$y=1$$
  
 $3x+1+x=10x+1$   
 $4x+1=10x+1$   
Not true.

Try 
$$y=3$$
  
 $3x+3+3x = 10x+3$   
 $6x+3 = 10x+3$   
not true

Try 
$$y=7$$
  
 $3x+7+7x=10x+7$   
 $10x+7=10x+7$   
twe.

so the units digit must be 7. In fact, by checking individually, all the following numbers satisfy the rule:

**End of Exam** 

#### **Extra Working Out Space**

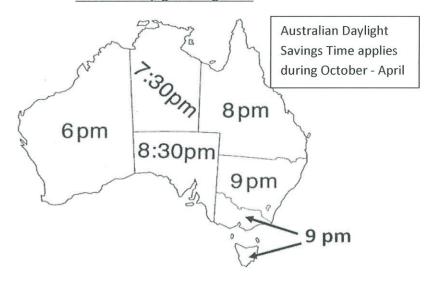
#### **Train Timetable**

	am	am	am	am	am	am	am
Central	10,17	10.30	10.47	11.00	11.17	11.30	11.47
Redfern	***	* * *		NI A CH		* * *	4 K K
Strathfield	10.28		10.58		11.28		11.58
Eastwood	* * *		1107				12.07
Epping	10.39		* * *	* * *	11.39	* 1 *	
Town Hall		10.32		11.02		11.32	
Wynyard		10.34	* * *	11.04		11.34	* * *
Milsons Point		10.38		11.08		11.38	
North Sydney	***	10.39		11.09		11.39	
Chatswood		10.51	4.4.4	11.21	* * *	11.51	
Hornsby	10.49	11.15	11.19	11.44	11.49	12.15	12.19
Вегоwта			11.29				12.29
Cowan			11.33				12.33
Hawkesbury River		4 4 4	11.42	8.5.8			12.42
Wondabyne	4 × 4	x 2 x	11.49	81.8	* * *	* * *	12.49
Woy Woy	11.22		11.55		12.22		12.55
Koolewong			1158		1		12.58
Tascott	4 4 4		12.01	*. *	* * *	* * *	1.01
Point Clare			12.04			***	1.04
Gosford	11.32	4 9 4	12.09	***	12.32		1.09
Narara	***		12.13				1.13
Niagara Park	* * *	* * *	12.15	* * *	* ***	***	1.15
Lisaeow			12.17				1.17
Ourimbah			1220				1.20
Tuggerah	11.45	2 2 2	12.26	***	12.45		1.26
Wyong	11.48		12.29	* * *	12.48		1.29

#### **Australian Standard Times**



#### Australian Daylight Savings Time



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