Year 8 Mathematics

End Term 2

45 marks

40 mins

Date

Instructions: 1. Answer all questions 2. Calculators permitted

Sample 1

Question 1 (8 marks - 1 mark each)

a) Write each of the following as a fraction, as a decimal, and as a percentage:

i) Company tax is set at three-tenths of the taxable income.

ii) The company reported a margin of 25 cents in the dollar.

iii) The Australian Reserve Bank cash rate was set at 5%.

b) Change each of the following mixed numbers to an improper fraction:

i) $3\frac{1}{2}$ **ii** $1\frac{5}{6}$

c) Change each of the following improper fractions to a mixed number:

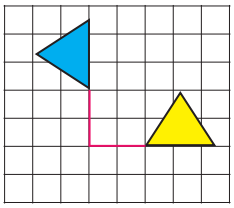
i) $\frac{7}{4}$ **ii)** $\frac{18}{5}$

d) Is 0.384615384615384615384615384615384615384 ($=\frac{5}{13}$) a rational number or an irrational number?

Question 2 (12 marks)

a) Describe the transformation (translation, reflection, or rotation) to produce the congruent shape from the original:

i)



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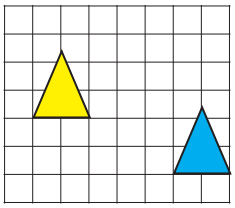

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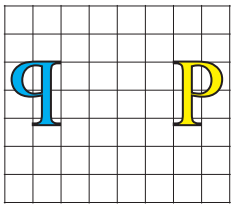
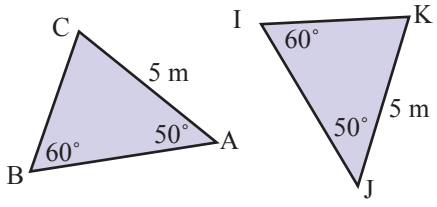


(1 each)

b) Use the tests for congruence to test whether the following pairs of triangles are congruent:

i)



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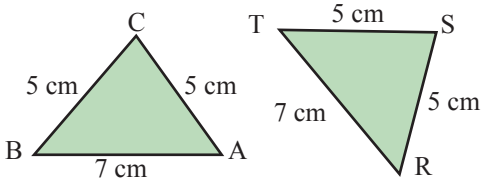

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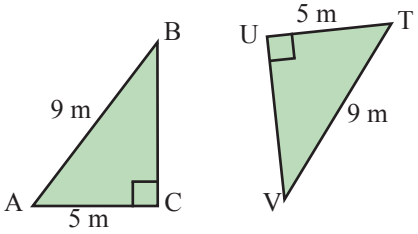

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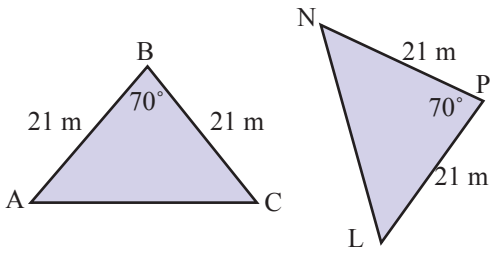


(2 each)

c) What are the new coordinates of P(3,2) after P is translated 4 units right and 6 units down? (1)

Question 3 (15 marks)

a) What is wrong with the following:
5 Year 7s, 5 Year 8s, 5 Year 9s, 5 Year 10s, were asked about their TV habits. The conclusion was that between 10% and 30% of students watch TV for more than 2 hours per night. (2)

b) Find the range, mean, median, and mode of each of the following data sets:
i) 3, 5, 3, 2, 1, 2, 3, 5 **ii)** 7.2, 7.4, 7.1, 7.3, 7.3, 7.2, 7.2 (2 each)

c) A person has an average of 78 after five tests. What mark must the person get on the sixth test so that the average of the six tests is 80? (2)

d) Which central measure, mean, mode, or median would be most useful in each of the following cases?
i) The average weight of Year 8 students.
ii) The most popular dress size.
iii) The average house price. (1 each)

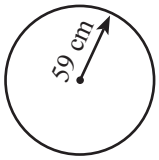
e) Surveys of the playground rubbish were conducted both before and after a campaign raising awareness of littering (4-excellent, 3-good, 2-fair, 1-poor). Analyse the data and make a comment. (4)

Before						After					
2	2	3	2	2	3	2	4	3	3	2	3
3	3	2	1	3	2	3	3	2	3	4	3
3	3	4	3	2	4	3	4	2	4	2	3
3	2	2	3	2	2	4	3	4	3	3	3
3	2	1	3	3	3	3	3	2	3	3	3

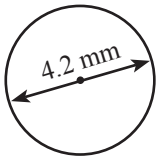
Question 4 (10 marks)

20 Calculate the circumference and the area of each of the following circles (2 decimal places):

i)

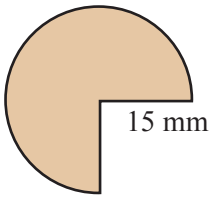


ii)

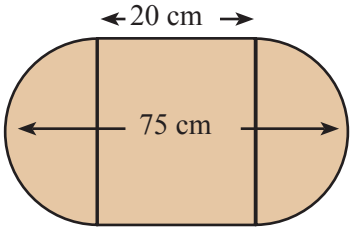


(2 each)

iii)



iv)



(3 each)

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Year 8 Mathematics

End Term 2

45 marks

40 mins

Date

Instructions: 1. Answer all questions 2. Calculators permitted

Sample 2

Question 1 (8 marks - 1 mark each)

a) Write each of the following as a fraction, as a decimal, and as a percentage:

i) Nine-tenths of the class thought that mental computation was necessary.

ii) The molecular weight ratio of hydrogen to oxygen in water is 2 : 16.

iii) The bank set its variable mortgage rate at 7%.

b) Change each of the following mixed numbers to an improper fraction:

i) $4\frac{1}{2}$ **ii** $3\frac{4}{5}$

c) Change each of the following improper fractions to a mixed number:

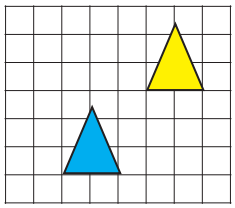
i) $\frac{5}{4}$ **ii)** $\frac{21}{5}$

d) Is 0.529411764705882352941176470588235294117647 05 ($=\frac{9}{17}$) a rational number or an irrational number?

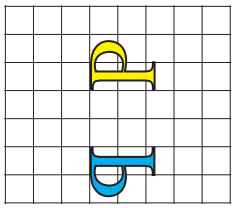
Question 2 (12 marks)

a) Describe the transformation (translation, reflection, or rotation) to produce the congruent shape from the original:

i)



ii)



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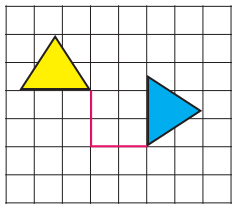
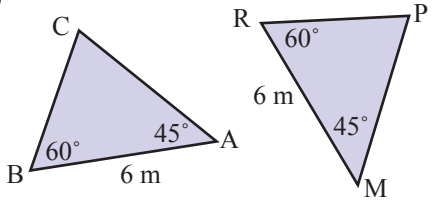


(1 each)

b) Use the tests for congruence to test whether the following pairs of triangles are congruent:

i)



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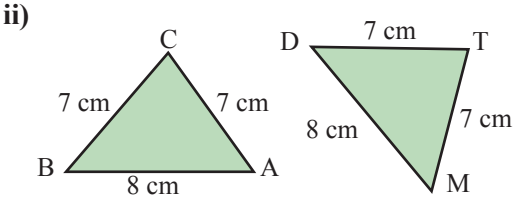

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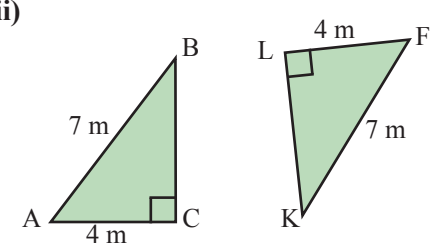

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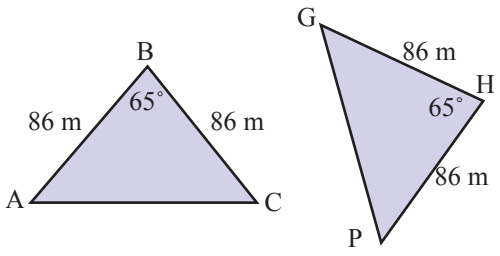


(2 each)

c) What are the new coordinates of P(5,1) after P is translated 3 units left and 4 units up? (1)

Question 3 (15 marks)

a) What is wrong with the following:
Survey forms, asking about what music should be played at the upcoming school dance, were placed in the library along with the response box. (2)

b) Find the range, mean, median, and mode of each of the following data sets:
i) 2, 4, 5, 1, 3, 3, 3, 2 **ii)** 6.2, 6.8, 6.4, 6.2, 6.2, 6.3, 6.5, 6.1 (2 each)

c) A person has an average of 47 after three tests. What mark must the person get on the fourth test so that the average of the six tests is 50? (2)

d) Which central measure, mean, mode, or median would be most useful in each of the following cases?
i) The average height of Year 8 students.
ii) The most popular shoe size.
iii) The average wage. (1 each)

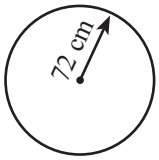
e) Curious about the reaction times of younger students, the following samples of reaction 'distance' were obtained (The distance a ruler falls between fingers before it is caught: 5-very quick, 4-quick, 3-average, 2-slow, 1-very slow). Analyse the data and make a comment. (4)

Year 5						Year 8					
2	1	2	3	3	4	4	5	4	5	3	3
1	5	3	2	3	1	2	3	3	5	3	3
4	4	1	3	2	3	3	4	3	1	2	4
3	2	3	4	3	4	2	4	4	5	2	3

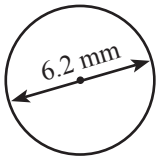
Question 4 (10 marks)

20 Calculate the circumference and the area of each of the following circles (2 decimal places):

i)

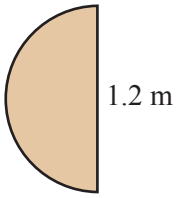


ii)

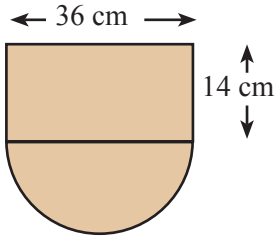


(2 each)

iii)



iv)



(3 each)

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