St. Stephen's Girls' College Mid-Year Examination 2016-2017

Form 1 176 students

MATHEMATICS Time Allowed : 1 hour

Name: _____ ()

Class: _____ Division: _____

Instructions:

1. This paper consists of TWO sections, A and B.

2. Answer ALL questions in the spaces provided in this *Question-Answer Paper*.

Section A (58%)

All rough work should be done on the rough work paper provided, but will not be marked.

1. Arrange the following numbers in ascending order. 1. 3 $0.05, -0.1, -\frac{1}{3}, \frac{1}{5}, -\frac{1}{2}$ 2. Use index notation to write 216 as a product of prime 2. 2 factors. 3. *A*, *B* and *C* are three points on the number line below 3. 3 -3 **B** -1 0 +1 Å Calculate A - B - C. 4. Represent the following word phrase by an algebraic 3 4. expression: Subtract *x* from *y*, and then multiply the difference by the square of *a*. 5. Determine whether the following statements are true or 5. false. Circle the correct answer. (a) $(-x^2) = (-x)^2$ (a) True / False 1 (b) True False 1 (b) $a \times a \times a = 3a$ (c) True / False 1 (c) -2(a-b) = -2a - 2b

VC, LHK, KAL, CYN

For Markers' Use Only		
1 – 23.	(58)	
24.	(6)	
25.	(4)	
26.	(3)	
27.	(6)	
28.	(6)	
29.	(5)	
30.	(5)	
31.	(7)	

Answers

Marks

Subtotal:

14

- 6. For the algebraic expression $-x + xy \times 3 + 8x + y$, write down
 - (a) the number of terms,
 - (b) a pair of like terms.
- 7. Solve the following equations: (a) -3(x+3)=15(b) $4-\frac{y}{6}=6$
- 8. If the sum of three consecutive odd numbers is -27, find the largest number.
- 9. There are *n* students in F.1A. The number of students in F.1B is 2 less than that in F.1A and half of the students in F.1B wear glasses. If there are 18 students in F.1B wearing glasses, find the value of *n*.
- 10. Consider the formula $f = 115 + \frac{7}{6}g$. If f = 80, find the value of g.
- 11. It is given that the result of adding the product of 8 and a to 24 is not less than 40. Set up an inequality to represent the above situation.
- 12. The general term of a sequence is $a_n = \frac{15}{2n}$. Write down the first two terms of the sequence.
- 13. It is given that y is a function of x, and y = 21 5x. Find the value of y when x = -3.
- 14. How many right angles are there in 360°?
- 15. What type of angle is the sum of two straight angles?
- 16. In the figure, find the size of $\angle QOS$.







Section B (42%) All working must be clearly shown in the spaces provided.

- 24. On Monday, the temperature in a city increased by 4°C. On Tuesday, the temperature increased by 3°C. On Wednesday, the temperature decreased by 8°C.
 - (a) Amy claims that the temperature on Wednesday is higher than that on Sunday. Do you agree? Explain your answer.
 (4 marks)
 - (b) If the temperature on Wednesday was 20°C, find the temperature on Sunday. (2 marks)

25.	(a) Simplify $x-5-2x \times y + x \times 3 + 4 + xy$.	(3 marks)
	(b) Write down the constant term of the answer in (a).	(1 mark)
		<u> </u>

26. The son of Mr. Chan is *s* years old now. 5 years ago, the age of Mr. Chan was 7 times the age of his son. Express the present age of Mr. Chan in terms of *s*. Simplify your answer. (3 marks)

- 27. Consider the sequence -3, -6, -9, -12, \cdots .
 - (a) Write down the general term of the sequence.
 - (b) Find the 25th term of the sequence.
 - (c) Determine whether -900 is a term of the sequence. Explain your answer.

(1 mark)

(2 marks)

(3 marks)

- 28. (a) In the given figure, construct
 - (i) a straight line which passes through *C* and is parallel to *AB*.
 - (ii) a straight line which passes through B and is perpendicular to AB.

(1 mark) (1 mark)



- (b) If the two straight lines constructed in parts (a)(i) and (ii) intersect at *K*, label *K* in the figure. What is the size of $\angle AKB$? (3 marks)
- (c) According to the sizes of the angles, what kind of triangle is ΔAKB ? (1 mark)

29. Solve the equation
$$\frac{2}{3} - \frac{x-1}{4} = \frac{2x-11}{12} + 1.$$

(5 marks)

- 30. The length and width of a rectangle are 20 cm and 12 cm respectively. It is given that the length increases by 10% and the width decreases by 10%.
 - (a) Find the new length.

- (1 mark) (1 mark)
- (b) Find the new width. (c) Will the percentage change of the area of the rectangle be 0%? Explain your answer.(3 marks)

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- 31. Peter bought 600 game cards at \$3000. He sold 40% of them at \$10 each. The rest were sold at packets of 6 game cards. He made an overall profit of 20% when all the cards were sold.
 - (a) Find the number of cards sold at \$10 each.
 (b) Find the profit made by selling all the cards.
 (c) Find the selling price of each packet of 6 game cards.
 (c) Find the selling price of each packet of 6 game cards.

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