ST. STEPHEN'S GIRLS' COLLEGE

Mid-Year Examination 2018 – 2019

Form 1 **VC, LHK, LL, JSCL, CYN**

179 students

Mathematics

Time Allowed : 1 hour

Question/Answer Paper

Please read the following <u>instructions</u> very carefully.

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

2. Write your class, class number, name and division in the spaces provided on this cover.

3. This paper carries 100 marks. Attempt ALL questions in this paper. Write your answers in the spaces provided in this Question/Answer Paper.

4. The diagrams in this paper are not necessarily drawn to scale.

Class	
Class No.	
Name	
Division	

For Markers' Use Only	
1 – 24.	(58)
25.	(6)
26.	(6)
27.	(6)
28.	(6)
29.	(6)
30.	(6)
31.	(6)
TOTAL	(100)

Section A (58%)

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

		Answers	Marks
1.	Arrange 0, +1.5, –3.5, –3.2, +2.3 in ascending order.	1. _____	2
2.	Find the H.C.F of $2\times3\times5^2$ and $3^2\times5\times7$.	2. _____	2
3.	Evaluate $1+\dfrac{-10-14}{(-3)(+\frac{2}{5})}$.	3. _____	3
4.	Find the difference when the cube of –2 is subtracted from the square of –3.	4. _____	2
5.	Represent the following word phrase by an algebraic expression: Divide the cube of *p* by 3, and then subtract the quotient from *q*.	5. _____	2
6.	What is the total cost of buying *w* kg of tea at \$2 per kg and 2*w* kg of coffee at \$3 per kg?	6. _____	2
7.	If Anita saves \$2*x* every week, how many weeks will it take her to save up to \$1,000?	7. _____	2
8.	Simplify the algebraic expression $-x-6+10x\div2$.	8. _____	2
9.	The product of 4 and *x* is less than the sum of 10 and *x* by 22. Find the value of *x*.	9. _____	2
10.	If the length of a wire is increased by 6 cm, the new length of the wire will be 4 times the original length. Find the original length of the wire.	10. _____	3
11.	The age of Amy now is twice that of Mary. 10 years ago, Amy was three times as old as Mary. Find Mary's present age.	11. _____	3

Subtotal: **/ 25**

12. Set up an inequality to represent each of the following.

(a) The result of adding x to 15 is less than 2.

12. (a) _____ 2

(b) The result of multiplying 4 by the square of q is at least 100.

(b) _____ 2

13. The speed of a car s m/s can be calculated by the formula $s = 5 + 0.4t$. If the speed of the car is 7 m/s, find the value of t.

13. t = _____ 2

14. It is given that y is a function of x and $y = x^2 - 3x$. If $x = -2$, find the value of y.

14. _____ 2

15. Which of the following angles is the smallest?

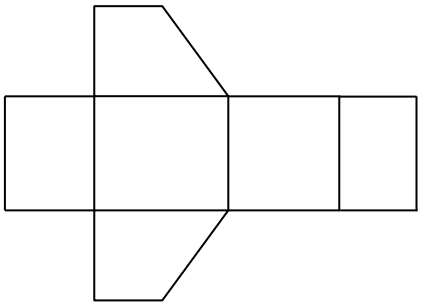
A. $\frac{1}{4}$ of a straight angle

B. $\frac{1}{6}$ of a round angle

C. $\frac{2}{5}$ of a right angle

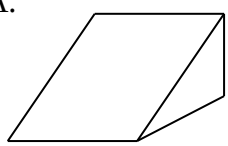
15. _____ 2

16.

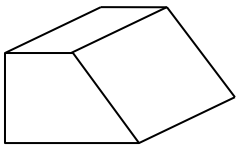


The above net is folded to form a solid. Which of the following may represent the solid formed?

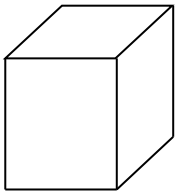
A.



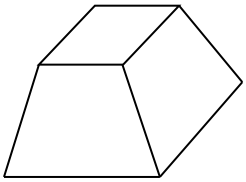
B.



C.

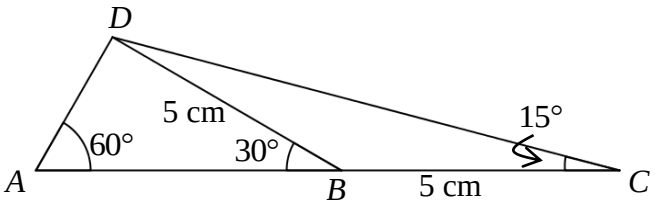


D.



16. _____ 2

Subtotal: **/ 12**

17.	In the figure, find and name the following triangles. (a) a right-angled triangle (b) an isosceles triangle  	17. (a) _____ (b) _____	 1 1
18.	What percentage of 5 hours is 15 hours?	18. _____	2
19.	28 members wear glasses in a swimming team. If 40% of members wear glasses, find the total number of members in the team.	19. _____	2
20.	Mary spends $\frac{1}{4}$ of her salary on rent, $\frac{1}{5}$ on food and saves the rest. What percentage of the salary is saved?	20. _____	3
21.	Last year, the number of participants in a competition was 4200. This year, there are 3570 participants only. Find the percentage change in the number of participants.	21. _____	3
22.	A leather jacket is sold for \$3036 at a profit of 15%. Find the cost price of the jacket.	22. _____	3
23.	The marked price of a watch is \$975. It is sold at a discount of 20% and the shopkeeper still makes a profit of 30%. What is the cost price of the watch?	23. _____	3
24.	Estimate the value of 238.64 + 452.17 – 305.23 by rounding up each number to the nearest ten.	24. _____	3

Subtotal: **/ 21**

Section B (42%)

All working must be clearly shown in the spaces provided.

25. There are 30 true or false questions in a test. 3 marks are given for each correct answer, 1 mark is deducted for each incorrect answer and candidates receive 0 marks for any questions not answered.
    (a) What is the lowest possible mark in this test? (1 mark)
    (b) Candy answers all the questions in the test and 18 of them are correct. How many marks does she score? (2 marks)
    (c) Peter answers 17 questions correctly and obtains 43 marks in the test. Find the number of questions that he does not answer. (3 marks)

26. There are some marbles in a blue bag and a red bag, and the number of marbles in the blue bag is 4 times that in the red bag. 6 marbles are taken out from the blue bag and put into the red bag. Suppose there are x marbles in the red bag originally.

    (a) Express the following in terms of x.

        (i) The new number of marbles in the blue bag (1 mark)

        (ii) The new number of marbles in the red bag (1 mark)

    (b) It is given that the new number of marbles in the blue bag is 8 more than twice that of the red bag. Find the total number of marbles in the two bags. (4 marks)

(a)(i) The new number of marbles in the blue bag in terms of x is _____ .

(ii) The new number of marbles in the red bag in terms of x is _____ .

(b)

27. (a) Solve the equation $0.5b - \frac{1}{4}b = 1$. (2 marks)

(b) Solve the equation $6 - 4[3 - 2(4x - 1)] = 5(2x - 5)$. (4 marks)

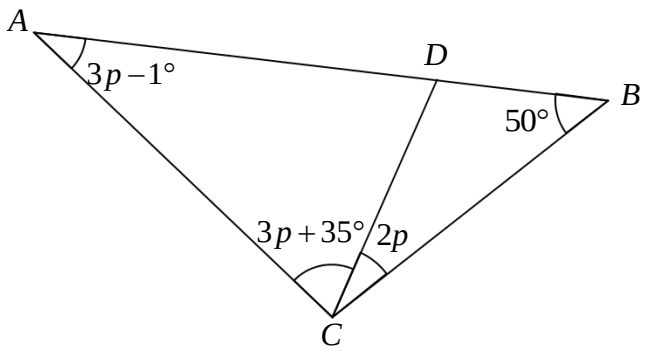
28. Alice receives \$220 as pocket money from her mother. She spends \$$x$ to buy books and $\frac{3}{5}$ of the rest of her pocket money to buy food. It is known that the total amount Alice spends is not greater than \$190.

    (a) Use an inequality to represent the above situation. (2 marks)

    (b) Is it possible that Alice spends \$150 to buy books? Explain your answer. (3 marks)

    (c) Write down a possible value of x. (1 mark)

29. In the figure, ADB is a straight line.



(a) Find the value of p. (3 marks)

(b) Is ΔABC an obtuse-angled triangle? Explain your answer. (3 marks)

30. It is given that the perimeter of a rectangle is 64 cm. The width of the rectangle is equal to 60% of the length.
    (a) Find the length and width of the rectangle. (3 marks)
    (b) It is given that the width of the rectangle is increased by 20%.
        (i) Find the new area of the rectangle. (1 mark)
        (ii) Will the percentage increase in the area of the rectangle be the same as the percentage increase in width? Explain your answer. (2 marks)

31. A shopkeeper sells a box of biscuits and a box of candy for $18 each. The biscuit is sold at a profit of 20% while the candy is sold at a loss of 20%.
    (a) Find the cost price of a box of biscuits and the cost price of a box of candy. (3 marks)
    (b) The shopkeeper claims that he makes neither a profit nor a loss when a box of biscuits and a box of candy are sold together. Do you agree? Explain your answer. (3 marks)

End of Paper