

St. Stephen's Girls' College
Final Examination 2018-2019

Form 1
178 students

VC, LHK, LL, JSCL, CYN

MATHEMATICS
Paper II
Time Allowed: 1 hour

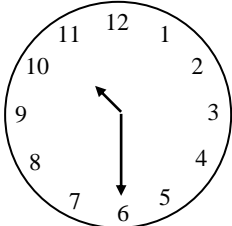
Name: _____ Class No. _____ Class: _____ Division: _____

Please read the following instructions very carefully.

- Answer *ALL* questions in the spaces provided in this *Question-Answer Paper*.
- All rough work should be done on the rough work paper provided, but will not be marked.
- The diagrams in this paper are not necessarily drawn to scale.
- This paper carries 100 marks.

Marks:

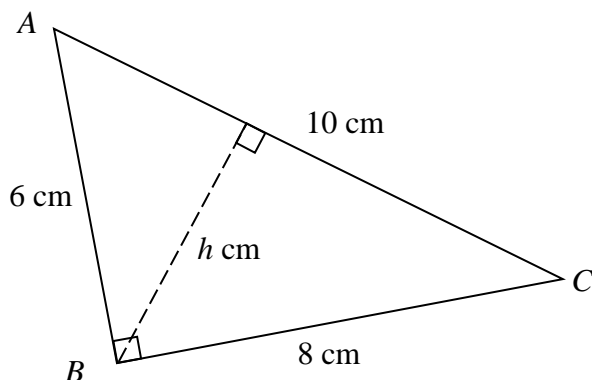
/ 100

	<u>Answers</u>	<u>Marks</u>
1. Evaluate $\frac{1}{-5} \times \left[1 - \left(-\frac{2}{3} \right) \right]$.	1. _____	3
2. Find the L. C. M. of 2×3^2 and $2^2 \times 5$.	2. _____	2
3. Subtract the cube of 3 from 11, and then divide the difference by 2. Find the quotient.	3. _____	3
4. Use an algebraic expression to represent the following: Divide the sum of p and 4 by the square of m .	4. _____	2
5. Write down the number of terms of $2mn + 5mn^2 - nm^2 \div 3 + 3 \times m$.	5. _____	2
6. Solve the following equation: $-5(2x - 3) = 35$	6. _____	3
7. Solve the equation $3x - \frac{2+x}{4} = 5$.	7. _____	2
8. Three times a certain number is 6 more than 2 times the number. Find the value of the number.	8. _____	3
9. Formulate an inequality to represent the following: Half of the sum of 2 and $5x$ is not less than 80	9. _____	3
10. The greatest number of pieces m which a pizza can be divided into by n cuts can be found by the following formula: $m = \frac{n \times (n+1)}{2} + 1$ What is the greatest number of pieces that a pizza can be divided into by 5 cuts?	10. _____	3
11. It is known that y is a function of x , and $y = 15 + 6x$. Find the value of y when x is $-3\frac{1}{2}$.	11. _____	3
12. Find the obtuse angle formed by the hour hand and the minute hand at 10 : 30.	12. _____	3
		
	Sub-total:	32

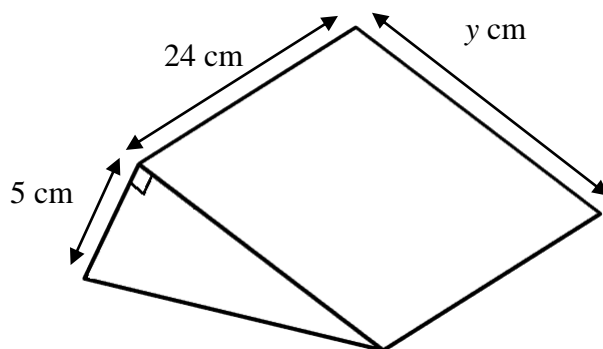
13. What percentage of 65 cm is 260 cm?
14. There are 35 students in a class. If 28 students in the class pass the Mathematics test, find the percentage of students who fail the test.
15. Kelvin and Kate order 2 lunch sets of the same price and they pay \$74.8 in total. If a 10% service charge is included, find the price of a lunch set.
16. The cost price of a toy car is \$210. If it is sold at a profit of 20%, find the selling price of the toy.
17. If an article is sold for \$420, the percentage loss is 30%. Find the percentage gain if the article is sold at \$720.
18. A shopkeeper offers a sale of 50% off for the purchase of a second T-shirt. If Mary bought 2 T-shirts which are of the same price, what is the overall percentage discount she received?
19. Round down 23.486 to 1 decimal place.

13. _____	2
14. _____	2
15. _____	2
16. _____	2
17. _____	3
18. _____	3
19. _____	2
20. _____	2

20. In the figure, $\angle ABC$ is a right angle. Find the value of h .



21. In the figure, the volume of the prism is 1260 cm^3 . Find the value of y .

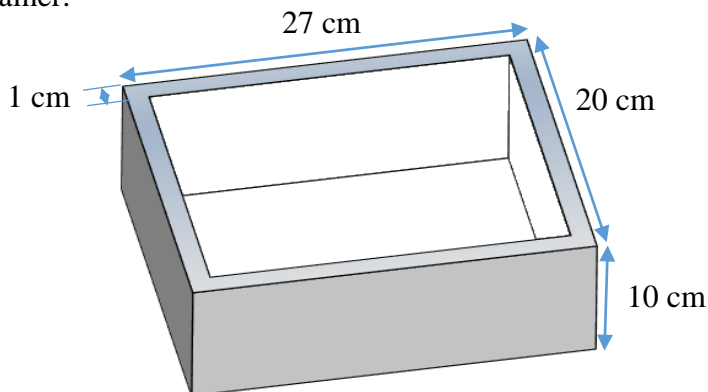


21. _____	3
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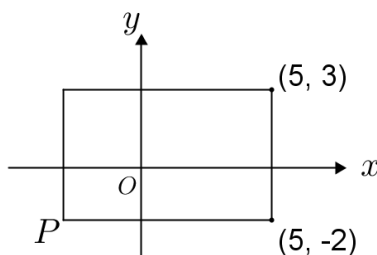
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22. 2700 cm^3 of water is poured into an empty container with uniform thickness as shown. Find the height of the water in the container.

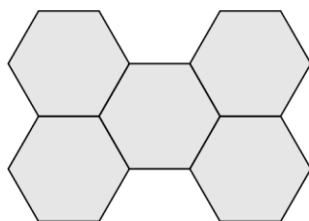


23. Which of the following points lie on the y -axis?
 $O(0, 0)$, $A(-3, 0)$, $B(0, 5)$, $C(4, 0)$
24. The coordinates of A and B are $(p, 2p + 5)$ and $(3p, p)$ respectively. Find the length of AB if AB is parallel to the x -axis.

25. The figure shows a rectangle whose perimeter is 26 units. Find the coordinates of P .



26. The coordinates of the vertices of $\triangle PQR$ are $P(3, -3)$, $Q(-4, -6)$ and $R(3, 5)$. Find the area of $\triangle PQR$.
27. $A(2, 50^\circ)$ is a point in a polar coordinate plane. Let O be the pole. If B is another point in the same polar coordinate plane such that $OA \perp OB$ and $OB = 3$ units, write down one possible answer for the coordinates of B .
28. In a rectangular coordinate plane, a point P is translated 5 units to the left to the point $Q(3, -4)$. Find the coordinates of P .
29. The following figure consists of 5 regular hexagons. How many axes of symmetry does the figure have?

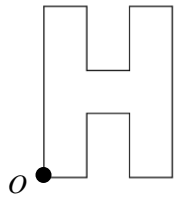


22. _____	3
23. _____	2
24. _____	3
25. _____	2
26. _____	3
27. _____	2
28. _____	2
29. _____	2

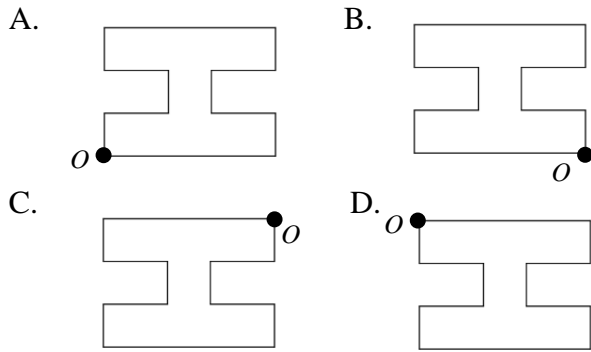
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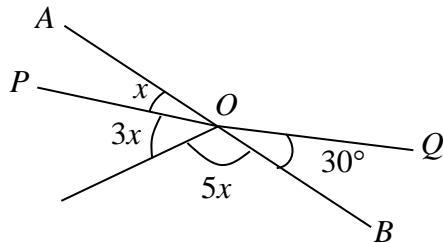
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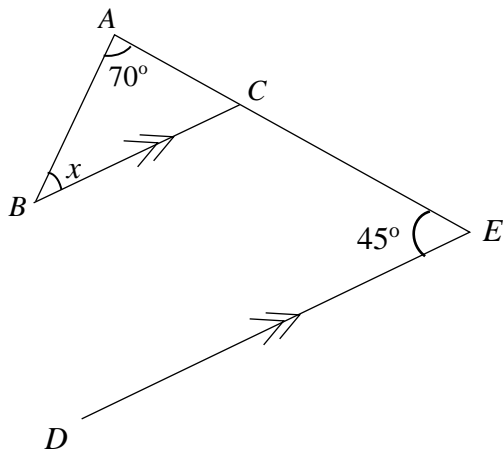
If the plane figure above is rotated clockwise about the point O through 270° , which of the following is its image?



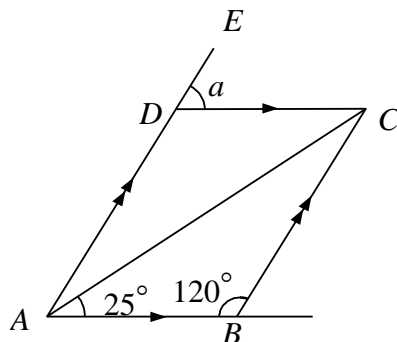
31. In the figure, AOB is a straight line. Find the value of x .



32. In the figure, ACE is a straight line. Find the value of x .



33. In the figure, D is the point on AE . $AE \parallel BC$ and $DC \parallel AB$. Find the value of a .



30. _____ 2

31. _____ 2

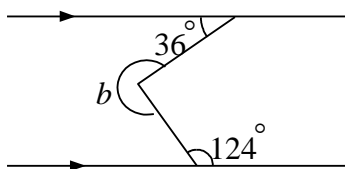
32. _____ 3

33. _____ 3

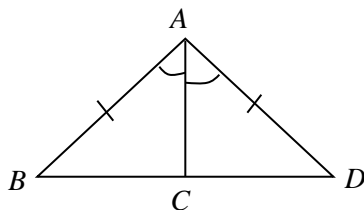
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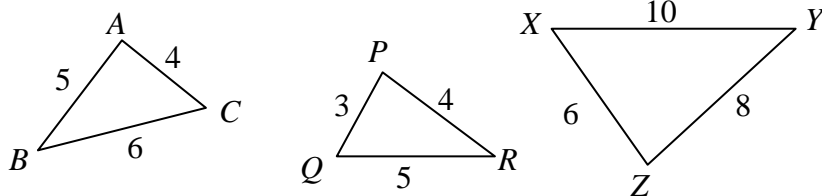
34. Find the value of b .



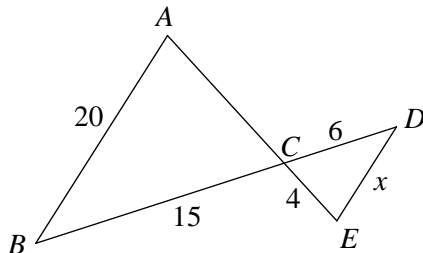
35. In the figure, name a pair of congruent triangles and give reasons.



36. In the figure, name a pair of similar triangles and give reasons.



37. In the figure, $\triangle ABC \sim \triangle EDC$. Find the value of x .



38. The following frequency distribution table shows the distances travelled (in km) using one litre of petrol of 30 cars. Find the value of x .

Distances travelled per litre of petrol (km)	Frequency
8.5 – 8.9	3
9.0 – 9.4	5
9.5 – 9.9	$x - 4$
10.0 – 10.4	6
10.5 – 10.9	8
11.0 – 11.4	3

34. _____ 3

35. _____ 1

Reason: _____ 1

36. _____ 2

Reason: _____ 1

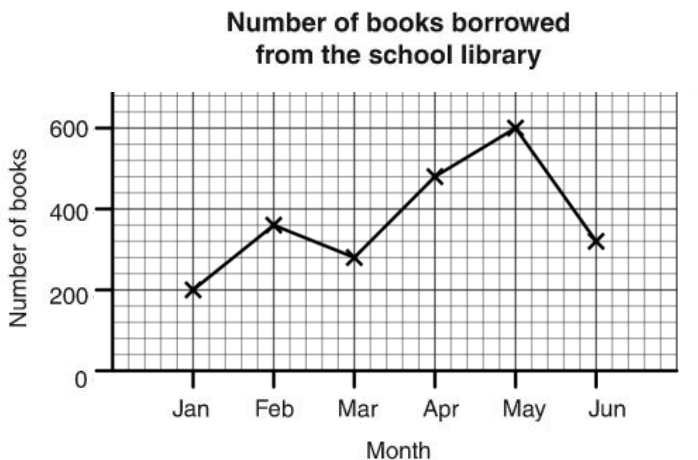
37. _____ 2

38. _____ 3

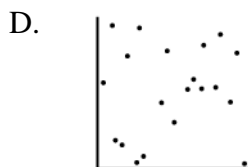
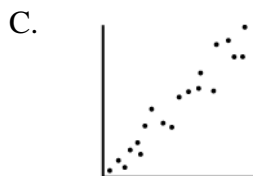
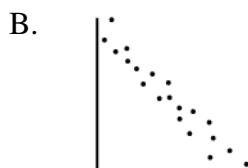
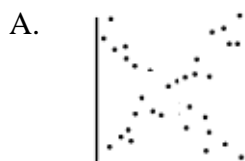
Sub-total:

13

39. The broken-line graph below shows the number of books borrowed from the school library from January to June. Find the average number of books borrowed in March, April, May and June.



40. Which of the following scatter diagrams shows a negative relationship between two sets of data?



39. _____ 3

40. _____ 2

Sub-total:

5

– END OF PAPER –