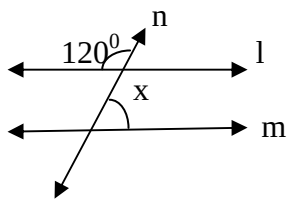
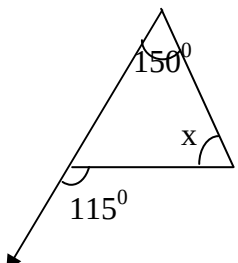
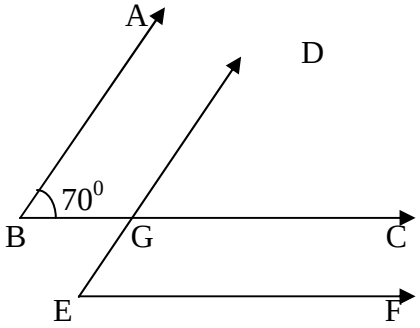
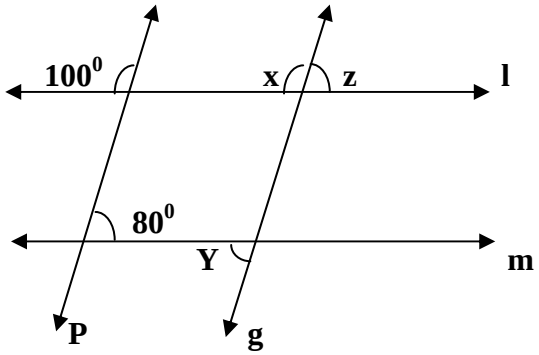
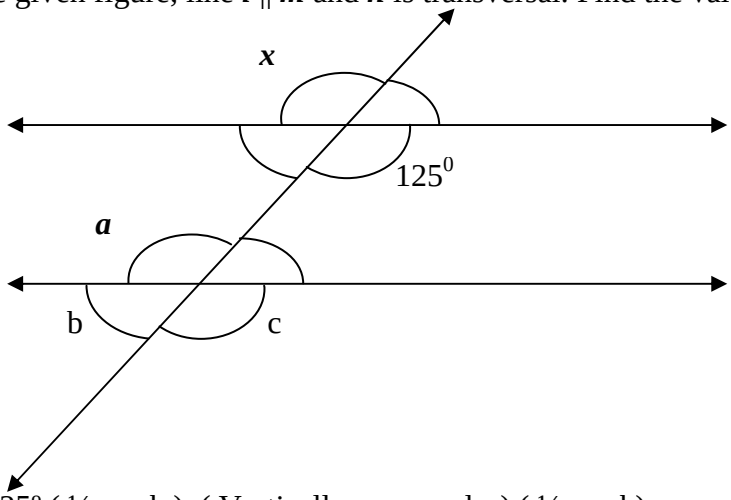
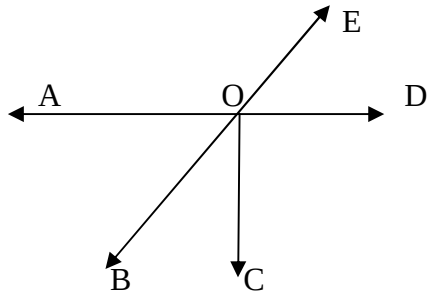
Answer Key Summative Assessment - 1 (2014-15) Mathematics – Set A Class: VII		
	Section – A	
Q1.	Find the complement of 65º. 25º	1
Q2.	Write $4p - 5 = 7$ in statement form. 5 subtracted from 4 times p gives 7	1
Q3.	Write a pair of negative integers whose difference is -8. (-10) and (-2)	1
Q4.	Find $\frac{1}{2}$ of $2\frac{3}{4}$. $\frac{11}{8}$	1
	Section – B	
Q5.	Find 3 rational numbers between $\frac{-2}{5}$ and $\frac{-1}{3}$. $\frac{-2}{5}$ and $\frac{-1}{3}$, LCM of 5 and 3 = 15 and conversion of the fractions to $\frac{-6}{15}$ and $\frac{-5}{15}$ (½ mark), multiplying the numerator and denominator by 4, $\frac{-24}{60}$ and $\frac{-20}{60}$ (½ mark), the rational numbers b/w $\frac{-2}{5}$ and $\frac{-1}{3}$ are $\frac{-23}{60}, \frac{-22}{60}, \frac{-21}{60}$. (1 mark)	2
Q6.	Solve $3l - 5 = 7$. $3l - 5 = 7 \Rightarrow 3l = 7 + 5$ (½ mark), $3l = 12$ (½ mark), $l = 12/3$ (½ mark), $l = 4$ (½ mark)	2
Q7.	The side of an equilateral triangle is 4.5cm. Find its perimeter. Side of an equilateral triangle = 4.5cm (½ mark) Perimeter of an equilateral triangle = 3 × side (½ mark) = 3 × 4.5 = 13.5 cm (1 mark)	2
Q8.	Smriti deposits Rs. 5000 in her bank account and withdraws Rs. 2500 from it, the next day. If withdrawal of amount from the account is represented by a negative integer, then how will you represent the amount deposited? Find the balance in Smriti's account after withdrawal. The amount deposited will be represented as a positive integer. (½ mark) Amount deposited = + 5000 Amount withdrawn = - 2500 (½ mark) Balance in the account = + 5000 + (- 2500) (½ mark) = 5000 – 2500 = + 2500 (½ mark)	2
Q9.	Find the value of *x*. if ***l*** || ***m***  $120^o + \angle 1 = 180^o$ (linear pair) (½ mark), $\angle 1 = 180 - 120 = 60^o$ (½ mark) $x = \angle 1$ (alternate angles) (½ mark), $x = 60^o$ (½ mark)	2
Q10.	Find the value of x.  $115^o = x + 50^o$ (½ mark) (Exterior angle property of a triangle) (½ mark) $x = 115^o - 50^o = 65^o$ (1 mark)	

	Section – C	
Q11.	a) Arrange the following in ascending order : $\frac{-2}{7}, \frac{-2}{3}, \frac{-2}{5}$ b) Represent $\frac{-5}{3}$ on the number line. a) $\frac{-2}{3} < \frac{-2}{5} < \frac{-2}{7}$ (½ mark for each correct entry) b) number line (½ mark), locating correct 2 integers between which the rational no.lie (½ mark) representing the correct rational no. (½ mark)	1 ½ 1 ½
Q12.	Raju's father's age is 5 years more than three times Raju's age. Find Raju's age, if his father is 44 years old. Let Raju's age be *x* yrs. (½ mark) His father's age = 44 yrs ATQ : $3x + 5 = 44$ (1 mark), solving (1 mark) $x = 13$, Hence statement (½ mark)	3
Q13.	A die is thrown. Find the probability getting : a) getting an even number on the top. b) getting a natural number on the top. c) getting a 7 on the top. Formula (½ mark) a) $\frac{1}{2}$ (½ mark), b) 1 (1 mark) c) 0 (1 mark)	3
Q14.	After simplifying put appropriate sign in the box. 36 + (-24) – 15 36 – (-24) + (-15) 36 + (-24) – 15 36 – (-24) + (-15) 36 – 24 – 15 ____ 36 + 24 – 15 (1 mark) 36 – 39 _____ 60 – 15 (1 mark) -3 < 45 (1 mark)	3
Q15.	In a class of 40 students, $\frac{1}{5}$ of the total number of students like to study English, $\frac{2}{5}$ of the total number like to study Mathematics and the remaining students like to study Science. a) How many students like to study English? b) How many students like to study Science? Statements (½ mark) a) $\frac{1}{5} \times 40 = 8$ (½ mark) b) Fraction of students who like science = $1 - \left[\frac{1}{5} + \frac{2}{5}\right]$ (½ mark) = $1 - \frac{3}{5} = \frac{2}{5}$ (½ mark) Number of students who like science = $\frac{2}{5} \times 40 = 16$ (1 mark)	1 + 2
Q16.	Find the mean, median and mode of the given data : 2, 14, 16, 12, 14, 14, 16, 14, 10, 14, 17 Mean (formula) (½ mark), calculation (½ mark) mean = 13 Arranging in ascending order (½ mark), formula (½ mark), calculation (½ mark) median = 14 Mode = 14 (½ mark)	3
Q17.	Anwar thinks of a number. If he takes 7 away from $\frac{5}{2}$ of the number, the result is 23. Find the number. Let the number anwar thought be *y* (½ mark) ATQ : $\frac{5}{2}y - 7 = 23$ (1 mark) , $\frac{5}{2}y = 23 + 7 = 30$ (½ mark) $5y = 30 \times 2$ (½ mark), $y = 60/5 = 12$ (½ mark)	3
Q18.	ABCD is a quadrilateral. Show that AB + BC + CD + DA > AC + BD In quad ABCD, AC and BD are the diagonals fig. (½ mark) By triangle inequality (½ mark), In Δ ABC, AB + BC > AC (½ mark) In Δ BCD, BC + CD > BD (½ mark), In Δ ADC, CD + AD > AC (½ mark), In Δ ABD, AD + AB > BD (½ mark) Adding all the inequalities, 2 (AB + BC + CD + DA) > 2 (AC + BD) (½ mark)	3

	AB + BC + CD + DA > AC + BD (½ mark)	
Q19.	In the given figure the arms of two angles are parallel. If $\angle ABC = 70^0$ then find the $\angle DGC$ and $\angle DEF$.  ∠ABC = ∠DGC = 70º (1 mark), (corresponding angles AB ‖ DE) (1 mark) ∠DGC = ∠DEF = 70º (1 mark), (corresponding angles BC ‖ EF) (1 mark)	3
Q20.	Find the value of x, y, z if ***l*** ‖ ***m*** and p ‖ ***g.***  x = 100º (corresponding angles p ‖ g) (1 mark) x + z = 180º (linear pair), z = 80º (1 mark) y = 80º (alternate angles p ‖ g) (1 mark)	3
	Section – D	
Q21.	A tree is broken at a height of 5m from the ground and its top touches the ground at a distance of 12m from the base of the tree. Find the original height of the tree. Fig (½ mark), Let the length of the broken tree be *x* m i.e. the hypotenuse = *x* (½ mark) Perpendicular = 5m and Base = 12m. (½ mark) By Pythagoras Thm. (½ mark) $x^2 = 5^2 + 12^2$ (½ mark), $x^2 = 25 + 144$ (½ mark), $x^2 = 169$, x = 13m (½ mark) Hence statement (½ mark)	4
Q22.	The performance of a student in 1st term and 2nd term is given. Draw a double bar graph choosing appropriate scale and answer the following: What quality of the child is depicted through the graph? Scale and axes (½ mark), each subject (½ mark), Quality of the student depicted is Hard work (1 mark)	4

SUBJECT	ENGLISH	HINDI	MATHS	SCIENCE	S. SCIENCE
I Term	75	72	90	85	83
II Term	80	75	97	89	85

Q23.	In the given figure, line ***l*** || ***m*** and ***n*** is transversal. Find the value of ***x, a, b and c .***  x = 125º (½ mark) (Vertically opp. angles) (½ mark) a = x = 125º (½ mark) (Corresponding angles) (½ mark) c = 125º (½ mark) (Corresponding angles) (½ mark) a + b = 180º (Linear pair) (½ mark) , b = 180º – 125º = 55º	4
Q24.	a) Solve : 16+ 4(*m*+2) =0 b) Construct an equation starting with *x* = 3. a) 16+ 4(*m*+2) =0 $\Longrightarrow$ 4 (m + 2) = - 16 (1 mark) $\Rightarrow$ m + 2 = - 16 / 4 (½ mark) m + 2 = - 4 (½ mark) $\Longrightarrow$ m = - 4 – 2 (½ mark) $\Longrightarrow$ m = - 6 (½ mark) b) 2x + 3 = 9 (1 mark)	3 + 1
Q25.	a) Each side of a regular polygon is 2.5cm in length. The perimeter of the polygon is 12.5cm. Find the number of sides of the polygon. b) How much less is 30.2 km than 45.5 km? a) Statements (½ mark), Number of sides = perimeter ÷ side (½ mark) Number of sides = 12.5 ÷ 2.5 (½ mark) = 5 (1 mark), Hence statement (½ mark) b) 45.5 – 30.2 = 15.3 km (1 mark)	3 + 1
Q26.	In a class test containing 20 questions, 5 marks are given for every correct answer, (-2) marks are given for every incorrect answer and zero for not attempting any question. a) Gurpreet attempts all questions but only 10 of her answers are correct. What will be her score? b) One of her friends attempted 10 questions but gets only 5 answers correct. What will be her score? Statements (½ mark) a) No. of correct answers = 10, No. of incorrect answers = 10 (½ mark) Score = 10 × (+ 5) + 10 × (- 2) = 50 – 20 = 30 (1 mark) b) No. of correct answers = 5, No. of incorrect answers = 5 (½ mark) Score = 5 × (+ 5) + 5 × (- 2) = 25 – 10 = 15 (1 mark) Hence statement (½ mark)	2 + 2
Q27.	Seema reads $\frac{1}{3}$ part of a book in 1 hour. a) How much part of the book will she read in $2\frac{2}{3}$ hours? b) How much time will she take to read the whole book? a) Statements (½ mark), part of the book read in $2\frac{2}{3}$ hours = $\frac{1}{3} \times 2\frac{2}{3}$ (½ mark = $\frac{1}{3} \times \frac{8}{3}$ (½ mark) = $\frac{8}{9}$ (½ mark) hence statement (½ mark) b) Time taken to read $\frac{1}{3}$ part of the book = 1 hour Time taken to complete the book = 1 × 3 = 3 hours (1 mark) Hence statement (½ mark)	4
Q28.	A certain freezing process requires that room temperature be lowered from 40ºC at the rate of 5ºC every hour. Find the room temperature 10 hours after the process begins. Initial Temp. = 40ºC , rate of change in temp. = (- 5º C) per hour (1 mark) Temp. after 10 hours = 40º C + 10 × (- 5º C) (1 mark) = 40 + (-50) (½ mark) = 40 – 50 (	4

	½) = - 10 (½ mark), hence statement (½ mark)	
Q29.	The three angles of a triangle are in the ratio 1:2:3. Find the three angles. Let the three angles be x , $2x$ and $3x$ (½ mark) By angle sum property of a triangle (½ mark) ⇒ $x + 2x + 3x = 180$ (½ mark) $6x = 180$ (½) ⇒ $x = 180/6$ (½ mark) = $x = 30$ (½ mark), $2x = 60$ (½ mark), $3x = 90$ (½ mark)	4
Q30.	Name the following pairs of angles : a) Vertically opposite angles. b) Adjacent complementary angles. c) Linear pair. d) Equal supplementary angles.  a) ∠AOB and ∠DOE, b) ∠AOB and ∠BOC , c) ∠AOE and ∠DOE , d) ∠AOC and ∠COD	4
Q31.	Find the value of : a) $[\frac{9}{2} \times (\frac{-7}{4})] + [(-4) \div \frac{2}{3}]$ b) $[\frac{5}{63} - (\frac{-6}{21})] \div [\frac{5}{3} + \frac{3}{5}]$ a) $[\frac{9}{2} \times (\frac{-7}{4})] + [(-4) \div \frac{2}{3}] = \left[\frac{-63}{8}\right] + \left[-4 \times \frac{3}{2}\right]$ (½ mark) $= \left[\frac{-63}{8}\right] + (-6)$ (½ mark) $= \frac{(-63)+(-48)}{8}$ (½ mark) $= \frac{-111}{8}$ (½ mark) b) $[\frac{5}{63} - (\frac{-6}{21})] \div [\frac{5}{3} + \frac{3}{5}] = \left[\frac{5-(-18)}{63}\right] \div \left[\frac{25+9}{15}\right]$ (½ mark) $= \frac{23}{63} \div \frac{34}{15}$ (½ mark) $= \frac{23}{63} \times \frac{15}{34}$ (½) $= \frac{115}{714}$ (½ mark)	2 + 2