A

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FIRST TERM EVALUATION 2023-24

E-703

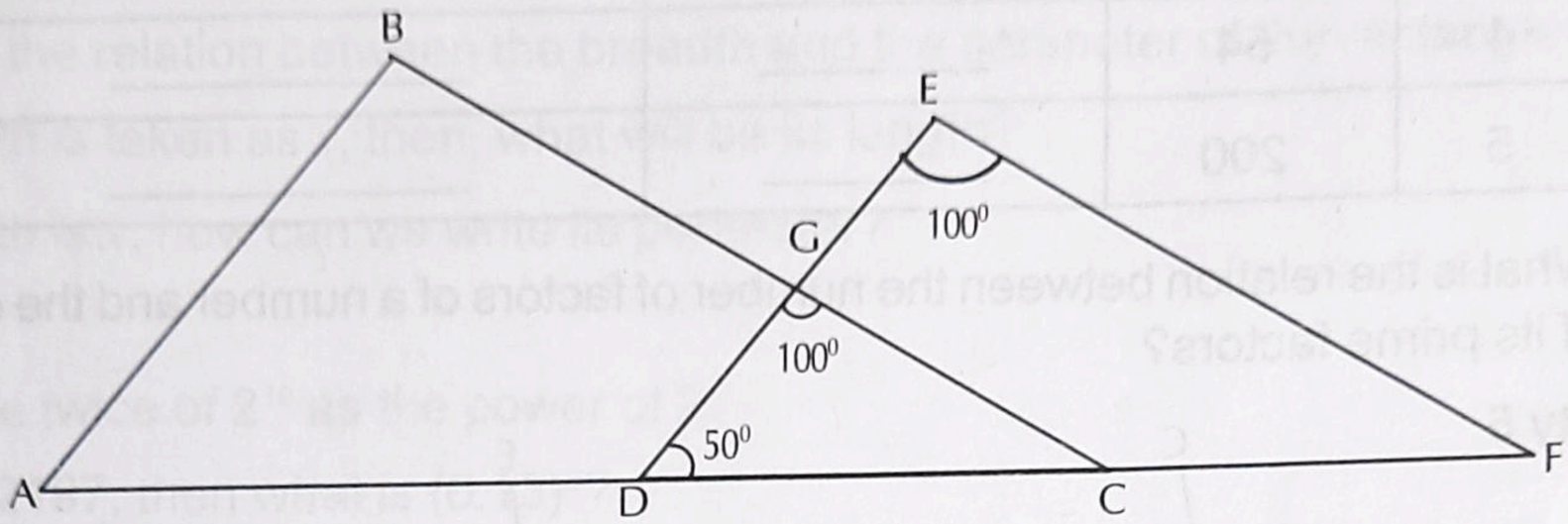
MATHEMATICS

Class: 7

Time: 2 hours

- 15 minutes is given as cool-off time.
- Read the questions carefully during this time.
- Attempt **ANY SIX** activities from Activity 1 to Activity 8.

Activity 1



Lines AB and DE are parallel.

A) Write the measures of all angles of triangle ABC.

B) Are lines BC and EF parallel? Why?

Activity 2

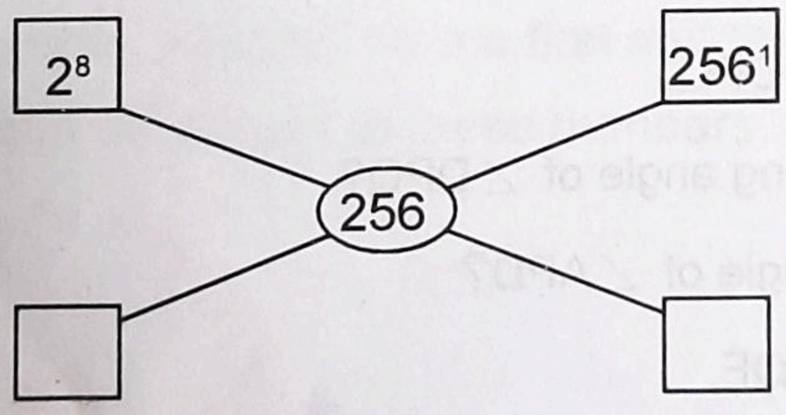
A) Draw a line AB of length 5 centimetres. Draw another line parallel to AB at a distance of 3 centimetres from AB. Draw angles measuring 60° at A and 120° at B. Name the points as C and D where these lines intersect the parallel line.

B) What is the most suitable name for the quadrilateral we just got?

Activity 3

$256 = 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 = 2^8$, $256 = 256^1$

A) 256 is written as the power of 2 and the power of 256. Write 256 as powers of any other two numbers.



B) Write 81 as powers of any three different numbers.

Activity 4

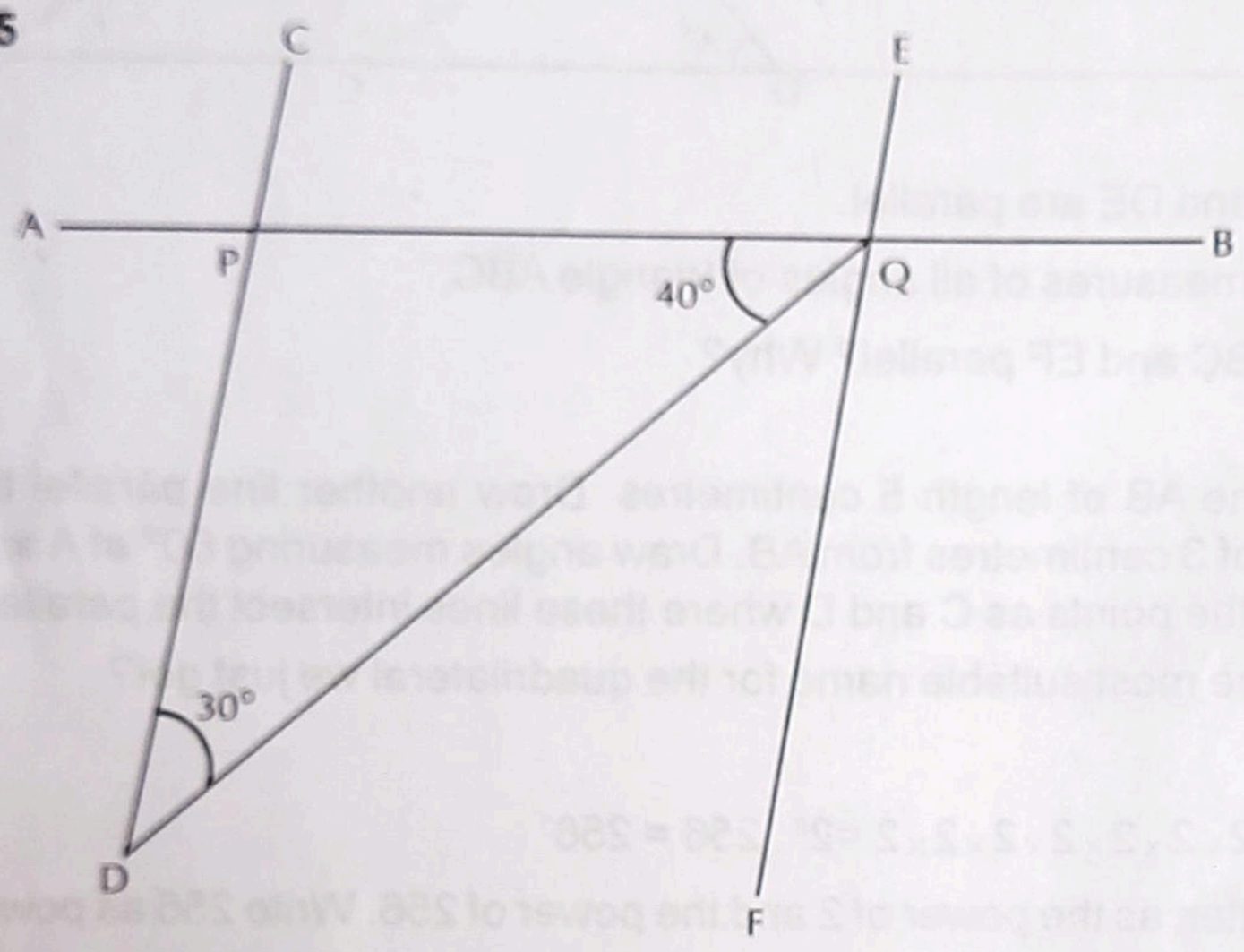
In the table, some numbers are written as the product of its prime factors and hence the number of factors are also given.

A) Complete the table.

Sl.No.	Numbers	Exponential form	Number of factors
1	25	5^2	2+1=3
2	36	$2^2 \times 3^2$	$(2+1)\times(2+1)=3\times3=9$
3	30	$2^1 \times 3^1 \times 5^1$	$(1+1)\times(1+1)\times(1+1)=2\times2\times2=8$
4	54	_____	_____
5	200	_____	_____

B) What is the relation between the number of factors of a number and the exponents of its prime factors?

Activity 5



In the figure, lines CD and EF are parallel.

A) Find the measure of $\angle DPQ$.

B) Which is the corresponding angle of $\angle DPQ$?

C) Which is the alternate angle of $\angle APD$?

D) Find the measure of $\angle PQF$.

E) Find the measure of $\angle DQF$.

Activity 6

This is the table prepared by Gowri to find the perimeters of rectangles whose length is twice its breadth.

A) Complete the table.

Breadth	Length	Breadth + Length	Perimeter
8	16	8+16 = 24	2x24 = 48
12			
15			

B) What is the relation between the breadth and the perimeter of the rectangle?

C) If breadth is taken as x, then, what will be its length?

D) If breadth is x, how can we write its perimeter?

Activity 7

A) Write the twice of 2^{10} as the power of 2.

B) If $13^3 = 2197$, then what is $(0.13)^3$?

C) What is the digit in the ones place of 6^{66} ?

D) Simplify $\frac{3^3 \times 3^5}{3^2 \times 3^4}$

Activity 8

Look at the pattern.

3+6+9 = 18

6+9+12 = 27

9+12+15 = 36

..... = ...

..... = ...

A) Write the next two lines of the pattern.

B) What is the relation between the sum and the middle number in each line.

C) If 'm' is the middle number, what will be the first and third numbers?
Write the algebraic form of the sum of these numbers.