



education

Department of
Education
FREE STATE PROVINCE

ENGINEERING GRAPHICS AND DESIGN TEST

GRADE 10

MARCH 2020

TIME: 1 HOUR

TOTAL: 60

This question paper consists of 3 pages

INSTRUCTIONS AND INFORMATION

1. This question paper consists of FOUR questions
2. Answer ALL the questions.
3. ALL drawings must be drawn to scale 1:1, unless stated otherwise.
4. ALL questions must be answered on the DIAGRAM SHEET as instructed.
5. ALL the pages must be restapled in numeric sequence, irrespective of whether the question was attempted or not.
6. Time management is essential in order to complete all the questions.
7. Print your name and surname as well as the grade in the space provided on each page.
8. ALL answers must be drawn accurately and neatly.
9. ALL necessary construction and projection lines must be shown.
10. Plan each drawing carefully from the given position, which is indicated on the diagram sheets.
11. Any details or dimensions not given must be assumed in good proportion.

FOR OFFICIAL USE ONLY								
QUESTION	MARKS OBTAINED			½	MODERATEF			½
1								
2								
TOTAL								
		6	0			6	0	

FINAL CONVERTED MARK	CHECKED BY
50	

NAME & SURNAME

QUESTION 1: FREE HAND DRAWING

Given:

Diagram sheet 1 (page 2) shows an illustration of a vehicle drawn within a frame.

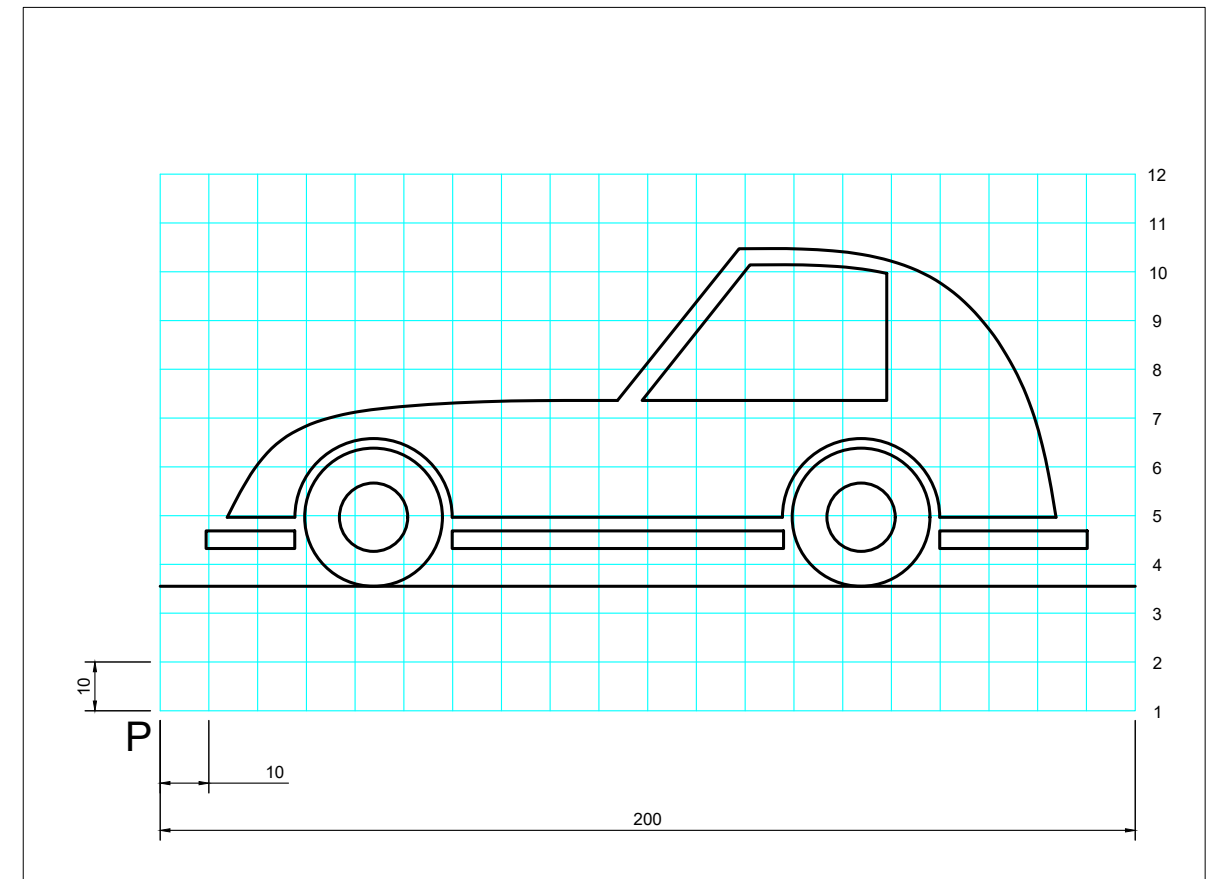
Instructions:

- 1.1. Use point P as the starting position.
- 1.2. Make use of your drawing instruments (T-square, ruler and set-square) and draw, according to a scale of 2:1 the given grid block. The line quality should be continuous thin lines.
- 1.3. In continuous thick (visible outline) line quality, copy FREE HAND, the given vehicle, by using the grid block method.

Note:

- Show all construction lines.

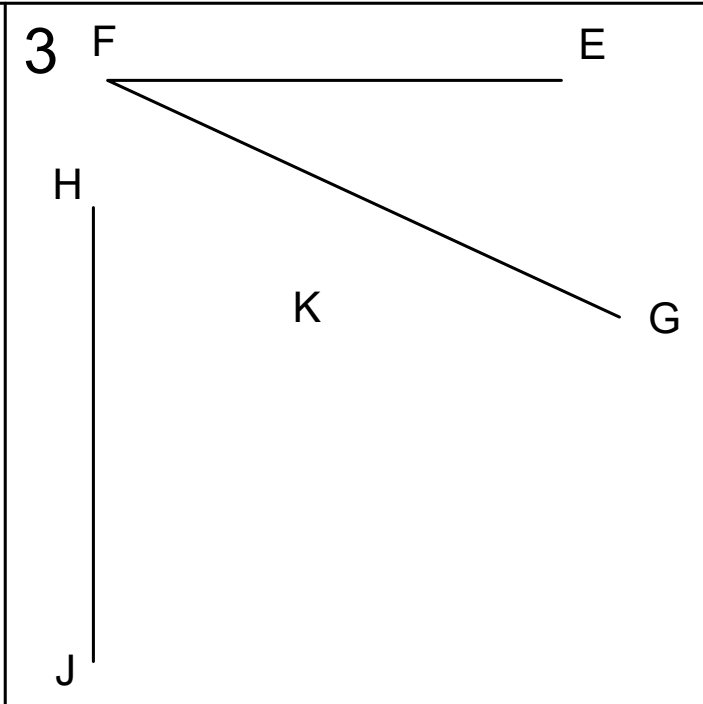
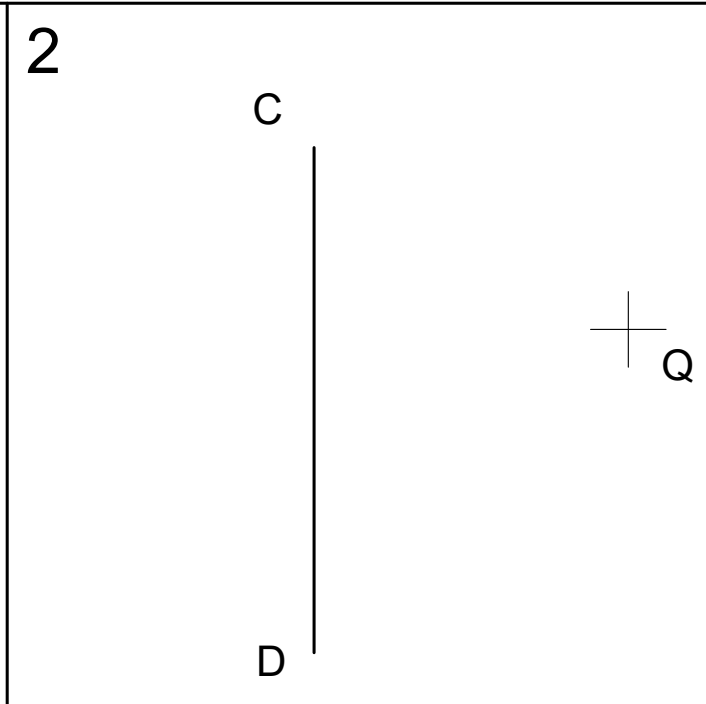
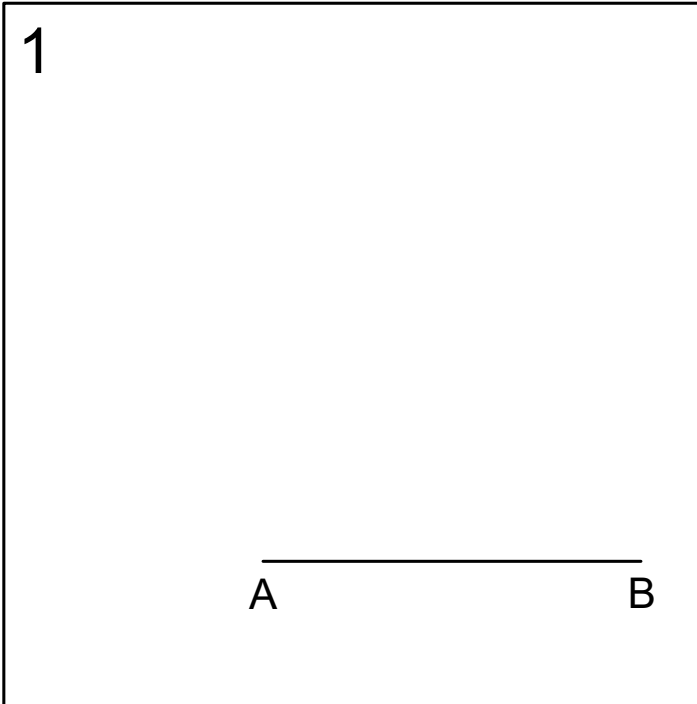
[18]



P.

ASSESSMENT CRITERIA			
1	START POSITION	1	
2	CORRECT SCALE	2	
3	BLOCK	5	
4	FREE HAND DRAWING	10	
TOTAL		18	

NAME & SURNAME	



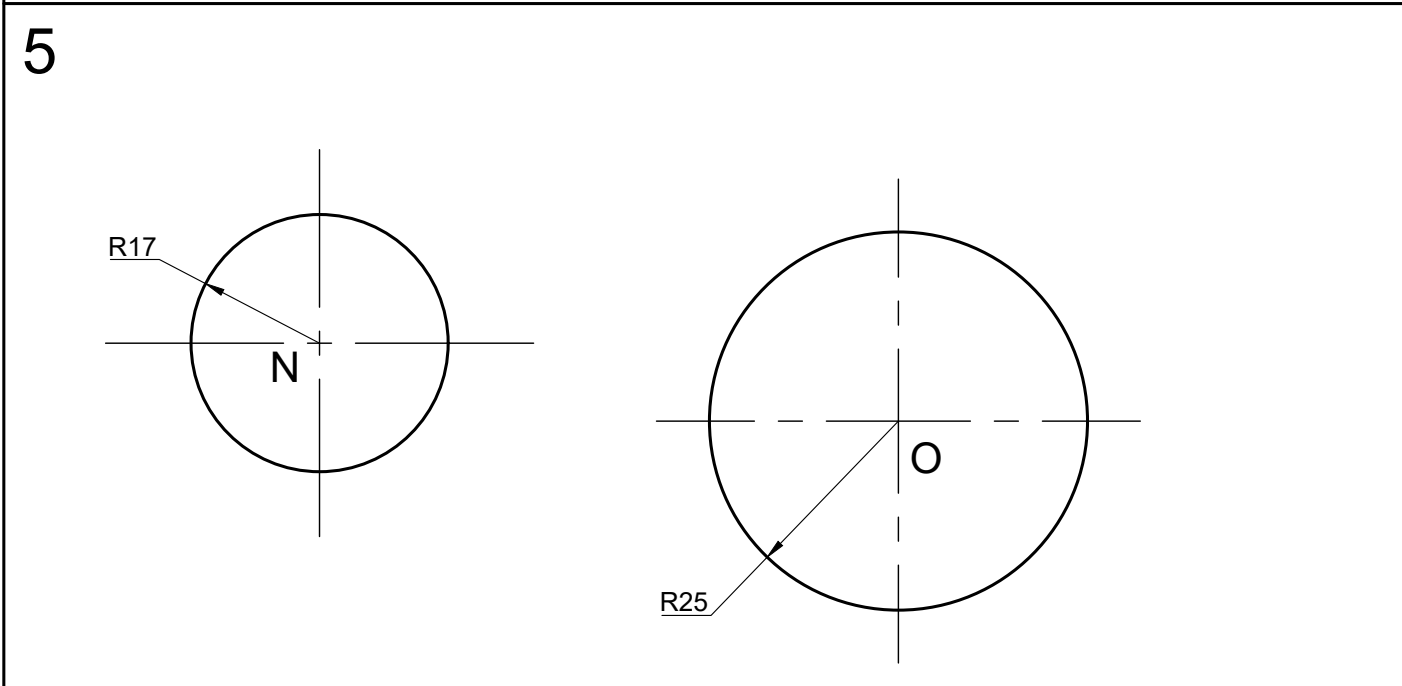
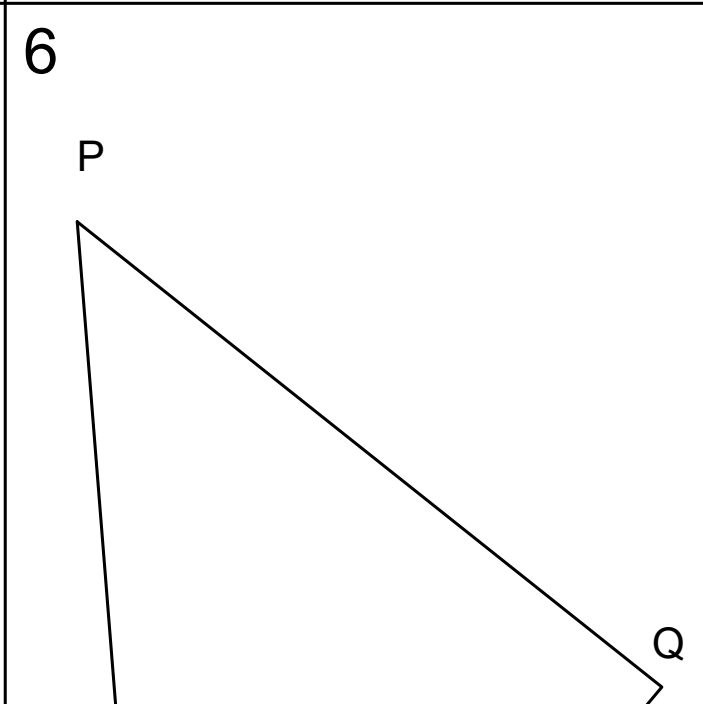
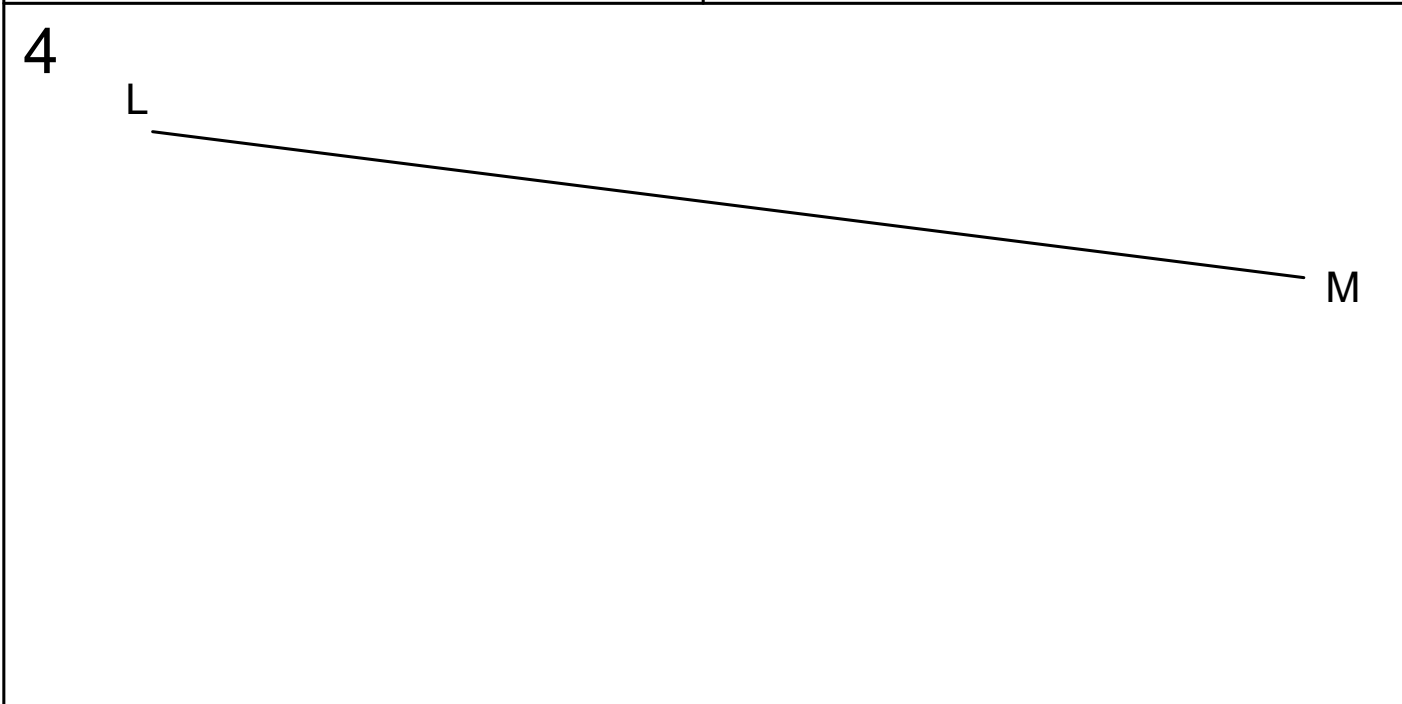
QUESTION 2: GEOMETRICAL CONSTRUCTIONS

Given:
Diagram sheet 1 with a table of questions and instructions.

Instructions:
Complete the table below by answering the questions referring to the drawing work.

Note:
Show all construction lines

[42]



QUESTIONS			
1	In the given area marked 1, construct an angle of 120° starting from line segment AB.	3	
2	In the given area marked 2, construct an angle of 90° from point Q to line segment CD.	4	
3	In the given area marked 3, copy the given angle EFG by means of construction to line segment HJ to form angle HJK.	5	
4	In the given area marked 4, divide line segment LM in eight equal parts by means of construction. Number the parts 1 to 8.	10	
5	Use the given circle N & O at the given area marked 5. Construct an inscribed tangent in order to include the tangent internally to both circles. Show all calculations.	8	
6	Use the given triangle PQR in the area marked 6 and construct an inscribed circle within PQR.	8	
7	Use your drawing instruments and draw in the area marked 7, between A and B each of the required lines.	4	
TOTAL		42	

7a: A continuous thin (soft) line			
a		b	
7b: A thin short dashed line			
a		b	
7c: A thin chain line			
a		b	
7d: A continuous thick (dark) line			
a		b	

NAME & SURNAME