

The University of the State of New York

REGENTS HIGH SCHOOL EXAMINATION

TENTH YEAR MATHEMATICS

(Plane Geometry)

Tuesday, August 20, 1957 — 8:30 to 11:30 a.m., only

Note to teacher: These questions are to be used in conjunction with the regular Regents examination in plane geometry by those pupils who have followed the outline in the tenth year syllabus. A copy of this sheet should be distributed to each pupil qualified, together with a copy of the regular examination paper in plane geometry. If sufficient copies of this sheet are not available, these questions may be written on the blackboard.

Part I

Directions: Questions 15, 22 and 24 in the examination in plane geometry are to be replaced by the following questions. Write answers on the regular question paper opposite the questions you are replacing and label them 15A, 22A and 24A.

- 15A If A is the point $(-2, 9)$ and B is the point $(6, 3)$, find the coordinates of the midpoint of the line segment AB .
- 22A The equation of the locus of points whose ordinates are twice their abscissas is
(a) $y = x + 2$ (b) $x = y + 2$ (c) $y = 2x$ (d) $x = 2y$
- 24A The distance from the point $(7, 4)$ to the point $(1, -4)$ is (a) 6 (b) 8 (c) 10
(d) 12

Part II

Directions: The following question *35 is based upon optional topics in the tenth year syllabus and may be substituted for any question in part II of the plane geometry examination.

- *35 The vertices of triangle ABC are the points $A(6, 2)$, $B(-4, 4)$, $C(2, -8)$.
- a Using graph paper, plot these points and draw triangle ABC . [2]
- b D and E are the midpoints of sides AB and BC respectively. Find the coordinates of D and E . [4]
- c Show by means of slopes that DE is parallel to AC . [4]

Part III

Directions: Question 34A is to be used in place of question 34 of the regular plane geometry examination.

- 34A The vertices of quadrilateral $ABCD$ are the points $A(5, 1)$, $B(13, 2)$, $C(9, 9)$, $D(1, 8)$.
- a Using graph paper, draw quadrilateral $ABCD$. [2]
- b Prove that $ABCD$ is a rhombus. [4]
- c Find the area of $ABCD$. [4]

FOR TEACHERS ONLY

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INSTRUCTIONS FOR RATING PLANE GEOMETRY

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Use only *red* ink or pencil in rating Regents papers. Do not attempt to *correct* the pupil's work by making insertions or changes of any kind. Use check marks to indicate pupil errors.

Unless otherwise specified, mathematically correct variations in the answers will be allowed. Units need not be given when the wording of the questions allows such omissions.

Part I

Allow 2 credits for each correct answer; allow no partial credit. For questions 21–23, allow credit if the pupil has written the correct expression instead of the letter *a*, *b* or *c*.

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|---|----------------|
| (1) 24π or $75\frac{3}{4}$ or 75.36 or 75.4 | (13) 2 |
| (2) 9 | (14) 16 |
| (3) 24 | (15) 9:16 |
| (4) 6 | (16) 24 |
| (5) 4 | (17) sometimes |
| (6) $3\sqrt{2}$ or $\sqrt{18}$ or 4.2 | (18) always |
| (7) $4\sqrt{3}$ or 6.9 | (19) always |
| (8) 9 | (20) never |
| (9) $4N$ | (21) <i>a</i> |
| (10) 50 | (22) <i>c</i> |
| (11) 12 | (23) <i>b</i> |
| (12) 135 | |

Tenth Year Mathematics

Part I

15 *A* (2, 6)

22 *A c*

24 *A c*