

Credit will be given for *five* answers only ; candidates are advised not to answer more than *five* questions.

All the questions are of equal value.

NOTE : *These instructions apply also to the papers for 1960—1956, inclusive.*

1. Construct a right-angled triangle having its hypotenuse 5" and one of its sides 3". Find its area.

2. Without using a protractor construct a triangle on a base of $3\frac{1}{2}$ " having each of its base angles one-fourth of the vertical angle.

3. AB and AC are chords of a circle, one of them 6.4" and the other 5". The angle $A = 60^\circ$. Without the aid of a protractor describe the circle. Explain the construction.

4. What is the relation between the exterior angle of a triangle and the two interior opposite angles ?
Show that the angle at the centre of a circle is double the angle at the circumference standing on the same arc.

5. Draw according to scale the triangle whose sides are 35", 45", and 50".

Divide the triangle into two triangles whose areas are in the ratio 3 : 2.

6. BC is the base of the triangle ABC, and AD is the line from the apex to the middle of the base. Show that $AC+AB$ are greater than $2AD$.

[It will help you if you produce AD to E making $DE=AD$, and if you join CE.]

7. Construct geometrical figures to show that:

(i) $(a+b)^2 = a^2 + 2ab + b^2$.

(ii) $a^2 - b^2 = a(a-b) + b(a-b)$.

Explain the geometrical figures.

8. Show how to describe a triangle having the base 3", the altitude 2", and the line from the vertex to the middle point of the base $2\frac{1}{4}$ ".

Make a parallelogram, having one angle 45° , equal (in area) to the triangle.