

1965

1. A donkey is tethered to a post by a rope 40 feet long. The distance from the post to a straight hedge is 25 feet. Find, by means of a diagram drawn to scale, the length of hedge which can be reached by the donkey.

[16 marks.]

2. Draw accurately the triangle ABC so that $AB = 1.4''$, $BC = 1.6''$, and $CA = 2.5''$. Draw the circle which passes through the vertices A, B, and C, and measure the length of the radius.

[16 marks.]

3. If the base of any triangle is produced both ways, show that the sum of the two exterior angles minus the vertical angle is equal to two right angles.

[17 marks.]

4. (a) Show that the angle at the centre of a circle is double the angle at the circumference standing on the same arc.

(b) What is the distance of a chord $4''$ long from the centre of a circle whose radius is $2\frac{1}{2}''$?

[17 marks.]

5. Draw the triangle whose sides are 2", 3", 4", and construct a parallelogram having an angle $22\frac{1}{2}^\circ$ and equal in area to the triangle.

(Do not use a protractor.)

[17 marks.]

6. (a) A triangle has its sides a , b , and c such that $a^2 + b^2 = c^2$. What is the length of the radius of the circle which passes through the vertices?

(b) Two circles intersect at A and B. AC and AD are two diameters, one in each circle. Show that the points C, B, D are in one straight line.

[17 marks.]