

Given: 2

1. Construct the following segments to add to your given:

- (a) A segment with length 3
- (b) A segment with length 4
- (c) A segment with length 5
- (d) A segment with length 6

2. In the space on the right, construct the following circles

- (a) A circle with radius 2
- (b) A circle with diameter 6

Construct each of the following figures using the segment lengths given above (leave space for further constructions using these figures):

- 3. A triangle with side lengths 2, 2, and 3 with vertices A, B, C .
- 4. A triangle with side lengths 3, 4, and 5 with vertices D, E, F .
- 5. A triangle with side lengths 3, 4, and 6 with vertices G, H, I .

6. Construct the three perpendicular bisectors for $\triangle ABC$. Name the point of intersection (concurrency) Point P . This point, Point P , is called the _____ of $\triangle ABC$.

7. Draw a circle with Point P as the center and a radius equal to the distance from this center to vertex A . This circle should also pass through vertices B and C . You have just constructed the "circumscribed circle". See Construction 10 in your Packet for step by step instructions.

8. Construct the three angle bisectors of $\triangle GHI$. Name the point of intersection (concurrency) Point R . This point, Point R , is called the _____ of $\triangle GHI$.

9. Construct a line segment that passes through Point R and is perpendicular to side \overline{GH} .

10. Draw a circle with Point Q as the center and a radius equal to the distance from this center to the point of intersection created at side \overline{GH} – which will be a tangent line to the circle. This circle should also be tangent to sides \overline{HI} and \overline{IG} . You have just constructed the "inscribed circle". See Construction 11 in your Packet for step by step instructions.

11. Construct the three medians for $\triangle DEF$. Name the point of intersection (concurrency) Point Q . This point, Point Q , is called the _____ of $\triangle DEF$.
12. Draw two large triangles: one equilateral and the other obtuse.
 - a. Construct two more triangles, each congruent to one of the triangles you drew.
 - b. Construct the circumscribed circle for each drawn triangle.
 - c. Construct the inscribed circle for the constructed triangles from #12a.
 - d. Identify the points of concurrency used as centers of the four circles by naming the points and saying which center of the triangle it is.

13. Construct the following shapes to review perpendicular constructions:
 - a. A square with side length 2.5.
 - b. A rectangle with one side length 2.5 and the other side length congruent to the diagonal of the square.