

Dear Mathematical Geniuses,

Below is a practice Construction Test. These are the types of questions you need to be prepared for in order to successfully rock the Construction Test you will be taking on Monday. You are allowed to work with ONE friend on these problems. Each person is responsible for turning in his/her own work at the end of class for a grade. Be smart. Utilize your time wisely. PRACTICE! PRACTICE ! PRACTICE! If you don't know how to do one of these constructions, today is a great day to get caught up!!!! Be sure to perform your work in boxes (the # of boxes you make is up to you).

**Practice Construction Test**

1. duplicate a line segment
2. duplicate an angle
3. construct a perpendicular through a point NOT on the line
4. construct a perpendicular through a point ON the line
5. construct the perpendicular bisector of a segment
6. construct the angle bisector of an angle
7. construct a triangle given 3 sides of a triangle; then construct one of the medians
8. construct the incenter of a triangle
9. construct a square with perimeter  $k$  given the length of  $k$
10. construct a triangle given 2 sides of the triangle and one of the angles
11. construct a pair of parallel lines using the rhombus method
12. construct a: 60 degree angle; 30 degree angle, 45 degree angle; 22.5 degree angle; 120 degree angle; 150 degree angle
13. construct a 75 degree angle
14. construct a pair of parallel lines using the equidistant method
15. construct an inscribed circle in an obtuse triangle
16. construct the circumcenter of an acute triangle
17. construct the orthocenter of an acute triangle
18. construct the centroid of an obtuse triangle
19. construct the circumscribed circle about an acute triangle

Dear Mathematical Geniuses,

Below is a Practice Writing Equations of Special Segments of a Triangle Test. These are the types of questions you need to be prepared for in order to successfully rock the Writing Equations of Special Segments of a Triangle Test you will be taking on Tuesday. You are allowed to work with ONE friend on these problems. Each person is responsible for turning in his/her own work at the end of class for a grade. Be smart. Utilize your time wisely. PRACTICE! PRACTICE! PRACTICE! If you don't know how to do one of these type of problems, today is a great day to get caught up!!! Be sure to perform your work in boxes (the # of boxes you make is up to you).

**Practice Writing Equations of Special Segments of a Triangle Test**

Given: A (3, 6) B (-5, 9) C (-2, -7), write the equation of:

1. perpendicular bisector of AB
2. perpendicular bisector of BC
3. perpendicular bisector of AC
4. median AM
5. median BN
6. median CP
7. altitude AX
8. altitude BY
9. altitude CZ

Using the equations you just wrote, determine the coordinates of the:

10. circumcenter of triangle ABC
11. centroid of triangle ABC
12. orthocenter of triangle ABC

Given: D (-2, 6) E (5, 2) F (-6, 4), write the equation of:

1. perpendicular bisector of DE
2. perpendicular bisector of EF
3. perpendicular bisector of DF
4. median DM
5. median EN
6. median FP
7. altitude DX
8. altitude EY
9. altitude FZ

Using the equations you just wrote, determine the coordinates of the:

10. circumcenter of triangle DEF
11. centroid of triangle DEF
12. orthocenter of triangle DEF