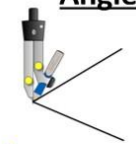
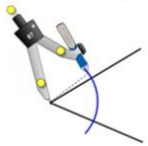
Hillcrest Mathematics Knowledge Organiser

20 - Constructions and Bearings

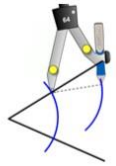
Angle bisector



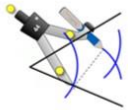
Place compass point on centre of angle.



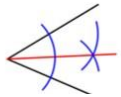
Open compass and draw an arc that cuts through both lines.



Keep compass open to the same angle. Move the compass point to one of the points where the arc crossed the line. Draw an arc in the centre.



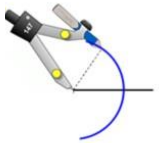
Keep compass open to the same angle. Move the compass point to the other point where the arc crossed the line. Draw an arc in the centre.



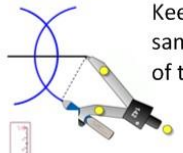
Using a ruler draw a straight line through the centre of the angle to the point where the two arcs cross.

Perpendicular bisector

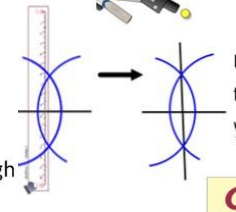
Place compass point on the end of the line and open to just over half way.



Draw a semi-circle.

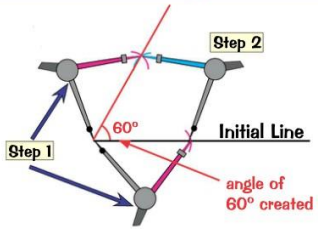


Keeping your compass open at the same angle, move it to the other end of the line. Draw another semi-circle.



Using your ruler draw a line through the two crosses that you have created.

Constructing Accurate 60° Angles



You can construct 30° angles and 45° angles by bisecting 60° and 90° angles

(Equilateral triangles have all angles that are 60°.)

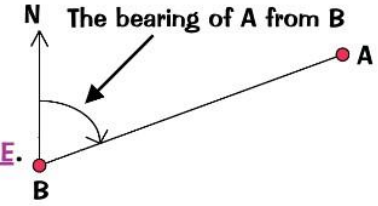
Bearings

To find or plot a bearing you must remember the three key words:

1) 'FROM' Find the word 'FROM' in the question, and put your pencil on the diagram at the point you are going 'from'.

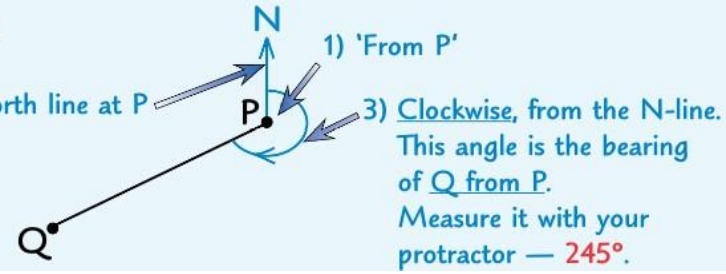
2) NORTH LINE At the point you are going FROM, draw in a NORTH LINE. (There'll often be one drawn for you in exam questions.)

3) CLOCKWISE Now draw in the angle CLOCKWISE from the north line to the line joining the two points. This angle is the required bearing.



ALL BEARINGS SHOULD BE GIVEN AS 3 FIGURES
e.g. 176°, 034° (not 34°), 005° (not 5°), 018° etc.

Find the bearing of Q from P.



Linked Prior Topics

Constructing Triangles
Angles

Vocabulary

Construction
Perpendicular Pair of Compasses
North
Bearings
Protractor
Clockwise
Arc

Linked Future Topics

Trigonometry
Pythagoras