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Edexcel loci and constructions answers

Guests must stand at least 2 metres from the monkey enclosure wall at the zoo. How would you draw an exact diagram to show where the visitor was not standing, using a scale of 1 cm : 1 m? Draw four lines parallel to each side of the rectangle, 2 cm away. Use the compass to draw rounded corners in D, E, F, and G. The straight line of the locus is parallel to the edges of the rectangle, because they are at a set distance from the edges. At each corner the hopper is a quarter circle drawn from fixed points D, E, F and G. Visitors must not stand in the area between the rectangles. Shade this part. 7.15 Loci & Constructions

amabrms112020-04-03T13:36:09+01:00 A locus (loci is numbered) is a line/shape/path defined by following a rule – for example always being 2m from a wall. You may be asked to build a locus, although the language used in exam questions doesn't always refer to these words because the questions are usually based on real-life situations. It's an excuse to get the math toys out - rulers and compasses in particular! You will usually work with scale drawings with this theme. Make sure you have all the equipment you need for your math exam, along with a backup pen and pencil. Rubber and pencil grinding can be essential on these questions as they are all about accuracy. Make sure you have a compass that is not loose and wobbly, make sure you can see and read the signs on the ruler and your stretcher. There are some basic loci - like a circle for being a certain distance from one point (e.g. the distance a mobile mast can achieve) and a straight line for being a certain distance from another line (as the example above - always at 2m from one wall). These notes focus on three of the more complex and used works of them: Mathematics: One cut one is exactly in half (bisect) but also passes it at a right (perpendicular) angle Use: Show an equivalent path (equal distance) between two places, if you're on one side or the other side of this line you know you're closer to one place than the other. Final result: 2. Perpendicular to a line, from a Math point: According to the real title! This is drawing a line, perpendicular to another, but the line must go through a specific point Use: Displays the shortest distance from the point to a line - e.g. the shortest distance from a lighthouse to the coast The end result: Mathematics: A cut-off line is exactly half the angle (bisect), the sides of the line show you are near a line making corners than other uses: Show an area on the map / diagram that is closer to one side than the other On the triangle below indicates the area that is closer to ac side 3 - This is a bisector angle - but notices how nothing about the angle is mentioned in question! To begin with, we open our compass at a distance roof (not too far, not too short) and we draw the loop from the sides AC and AB with compass point on A To open compass at the same time (this is why you don't want a loose and wobbly set!) Now we draw the ring from the first two loops (Note: It is luck, not judgment or anything that means the loop passes on or very close to the BC side, this is either nor necessary) The line passes through A and where the crossing is the bisector angle Your final answer will be on the side of this line that AC is on 2. A house is located between the towns A and B as shown on the scale chart below. The two masts, located at points R and S, provide the area on the map with radio signals. The house will receive radio signals from the mast at point R if it is: (a) closer to town A than B, OR (b) outside an area five miles from the mast at point S. Otherwise it will receive its mobile phone signal from the mast at point S. Show your work carefully on the scale diagram below, determine whether the house receives a radio signal from the mast at point R or mast at point S. 1 – To find (a) we need two perpendicular branches of AB - noting that there is no straight line drawn between A and B to start , but we can easily add an Open compass more than half the distance (no exact distance) and draw the loop both above and below the seams A and B - do this from both point A and point B Each bisector is the line that passes through both points where each set of supply loops meets the House is closer to town B We know need to check (b) - notice the question says either (rather than and) so only one condition needs to be satisfied for the house to get it TV signal from the mast at R This is a basic locus - it is an inner (part of a circle) drawn - to scale - with the center at S and the compass open at 5 cm Now Now you can see that the house is outside the area five miles from the mast at point S and so you can answer the question Although the house is closer to town B than town A it is outside an area five miles from the mast at point S, so the house receives its radio signal from the mast at point R. (Note in this case if you checked (b) first you won't have to check (a) as well – this is good but your final answer should explain why you just checked one of them.) 7.15 Loci & Constructions

amabrms1120 20-04-03T13:36:09+01:00 A locus (loci is the lot) is a line/shape/path defined by following a rule - wallet e.g. always 2m from a Wall. You may be asked to build a locus, although the language used in exam questions does not always refer to these words because the questions are usually based on real situations. It's an excuse to get the math toys out - rulers and compasses in particular! You will usually work with scale drawings with this theme. Make sure you have all the equipment you need for your math exam along with a backup pen and pencil. Rubber and pencil grinding can be essential on these questions as they are all about accuracy. Make sure you have a compass that is not loose and wobbly, make sure you can see and read the signs on the ruler and your stretcher. You. are some basic loci – like a circle for being a certain distance from one point (e.g. the distance a mobile mast can achieve) and a straight line for being a certain distance from another line (as the example above – always at 2m away from one wall). These notes focus on three of the more complex and used works of them: Mathematics: One cut one is exactly in half (bisect) but also passes it at a right (perpendicular) angle Use: Show an equivalent path (equal distance) between two places, if you're on one side or the other side of this line you know you're closer to one place than the other. Final result: 2. Perpendicular to a line, from a Math point: According to the real title! This is drawing a line, perpendicular to another, but the line must go through a specific point Use: Displays the shortest distance from the point to a line - e.g. the shortest distance from a lighthouse to the coast The end result: Mathematics: A cut-off line is exactly half the angle (bisect), the sides of the line show you are near a line making corners than other uses: Show an area on the map / diagram that is closer to one side than the other On the other side On the triangle below indicates the area that is closer to ac side 3 - This is a bisector angle - but notices how nothing about the angle is mentioned in question! To begin with, we open our compass at a comfortable distance (not too far, not too short) and we draw the loop from the ac and AB sides with the compass point on A To open the compass at the same distance (this is why you don't want a loose and wobbly set!) now we draw the loop from the first two loops (Note: That's luck, no judgment or anything means that the loop passes on or very close to the BC side, this is either nor necessary) The line passes through A and where the cross loop is the bisector angle Your final answer will be on the side of this line where ac is on 2. A house is located between the towns A and B as shown on the scale chart below. The two masts, located at points R and S, provide the area on the map with radio signals. The house will receive radio signals from the mast at point R if it is: (a) closer to town A than B, OR (b) outside an area five miles from the mast at point S. Otherwise it will receive its mobile signal from the mast at point S. Show your work carefully on the scale diagram below, determine whether the house receives radio signals from the mast at point R or mast at point S. 1 - To find (a) we need the perpendicular bisector of AB - notice there is no line drawn between A and B to begin with , but we can easily add an Open compass more than half the distance (without the correct distance) and draw the loops both above and below the A and B seams - do this from both point A and point B The perpendicular sides are paths that pass through both in which each set of bows meets the House near town B We know it is necessary to check (b) - announce the question or (rather than and) so only one condition needs to be satisfied for the house to get its TV signal from the mast at R This is a basic locus - it is an anthometer (part of a circle) drawn - to scale - with the center at S and the compass open at 5 cm Now you can see that the house is outside the area five miles from the mast at point S and so you can answer the question Although the house is closer to town B than town A, it is located outside an area five miles from the mast S, so the house receives a radio signal from the mast at point R. (Note in this case if you have checked (b) you will also first also not check (a) - this is good but your final answer should explain why you just checked one of them.) them.)