A and B are two points.

A   B

circle radius 4cm

closer to AD

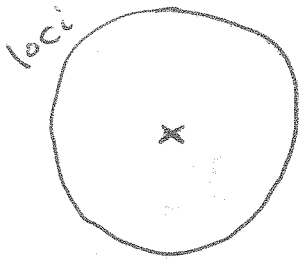closer to CD

D   C

Shade the region inside the rectangle, which is closer to AD that DC, and less that 4cm from D.

Remember Loci means distance
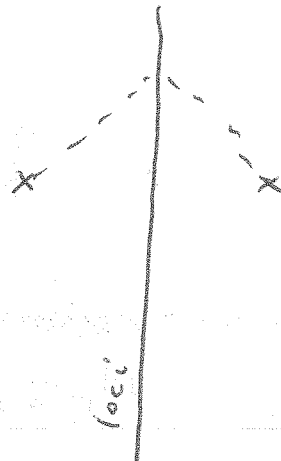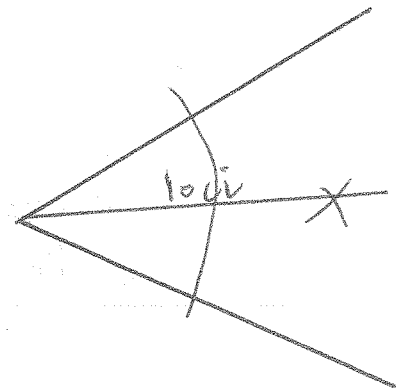
Loci of a Point

Loci of 2 points

(3)

Loci of 2 lines

loci

circle around that point

x

x   x

loci

same distance from both points

loci   x

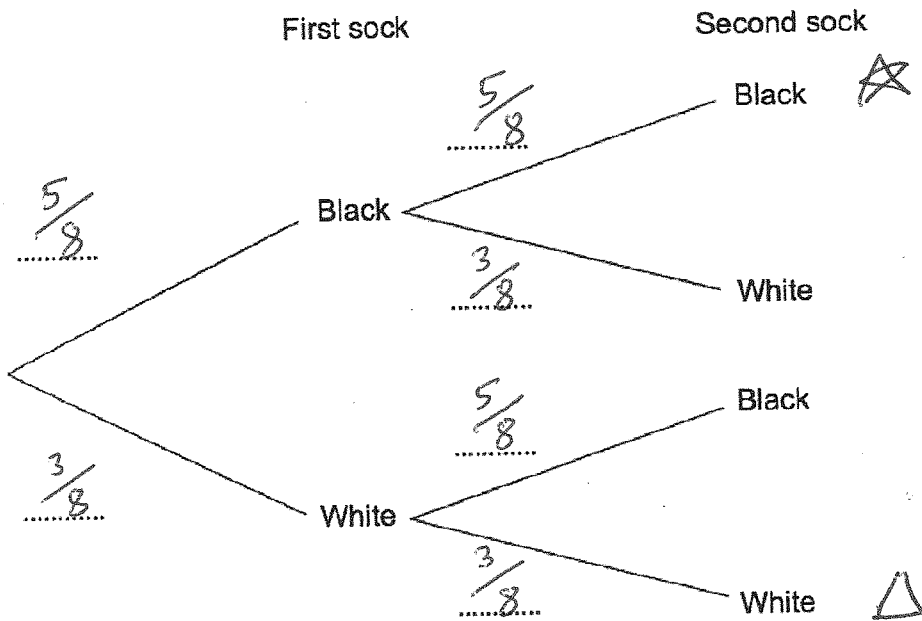angle bisector

2.   Natalie has 8 socks in a drawer.

5 of the socks are black.
3 of the socks are white.

Natalie takes out a sock at random, writes down its colour and puts it back into the drawer.
Then Natalie takes out a second sock, at random, and writes down its colour.

(a) Complete the probability tree diagram.

First sock   Second sock

                                    $\frac{5}{8}$ Black   ✗

              $\frac{5}{8}$ Black

                                    $\frac{3}{8}$ White

                                    $\frac{5}{8}$ Black

              $\frac{3}{8}$ White

                                    $\frac{3}{8}$ White   △

(2)

(b) Work out the probability that the two socks are the same colour.

Black & Black = ✗ = $\frac{5}{8} \times \frac{5}{8} = \frac{25}{64}$

White & White = △ = $\frac{3}{8} \times \frac{3}{8}$ $\frac{9}{64}$

Answer = $\frac{34}{64}$

(2)

Black & Black   OR   White AND white
        AND
                       =