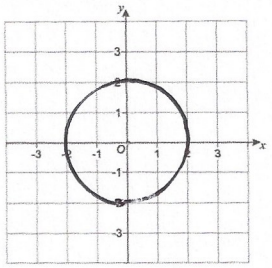
Name: _____ 5-a-day Higher Plus

22nd December

Corbettmaths

Sketch $x^2 + y^2 = 4$

$r = 2$

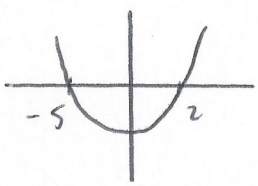


Solve the inequality

$x^2 + 3x \leq 10$

$x^2 + 3x - 10 \leq 0$

$(x+5)(x-2)$



$-5 \leq x \leq 2$

A bag contains 8 red sweets and 4 green sweets.
Kelly removes 3 sweets, one at a time, without replacement.
Find the probability that she does not choose 3 sweets that are the same colour.

$1 - P(\text{same})$ $1 - \frac{15}{55}$

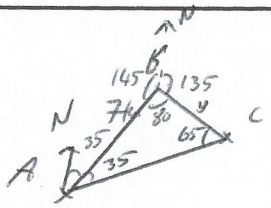
$P(RRR) = \frac{8}{12} \times \frac{7}{11} \times \frac{6}{10} = \frac{14}{55}$

$P(GGG) = \frac{4}{12} \times \frac{3}{11} \times \frac{2}{10} = \frac{1}{55}$

$\frac{8}{11}$

Ship B is 7km, on a bearing of 035°, from Ship A. Ship C is located on a bearing of 070° from Ship A and on a bearing of 135° from Ship B.

Work out the distance of Ship C from Ship B.



$\frac{y}{\sin 35} = \frac{7}{\sin 65}$

4.43km

The curve

$y = a + b^x$

passes through the points (1, 5) and (2, 17) where a > 0 and b > 0.

Find a and b

$17 = 5 - b + b^2$

$0 = b^2 - b - 12$

$(b-4)(b+3) = 0$

$b = 4$

$a = 1$

$5 = a + b$ $a = 5 - b$

$17 = a + b^2$