Name: _____ 5-a-day Higher Plus

22nd September

Corbettmaths

Expand $(8 - \sqrt{3})^2$ giving your answer in form $a + b\sqrt{3}$

$(8-\sqrt{3})(8-\sqrt{3})$

$64 - 16\sqrt{3} + 3$

$67 - 16\sqrt{3}$

Solve to one decimal place

$$\frac{1}{2x+1} + \frac{4}{x-2} = 1$$

$$\frac{x-2+4(2x+1)}{(2x+1)(x-2)} = 1$$

$$\frac{x-2+8x+4}{(2x+1)(x-2)} = 1$$

$9x + 2 = 2x^2 - 3x - 2$

$0 = 2x^2 - 12x - 4$

$0 = x^2 - 6x - 2$ (using quadratic formula)

$x = -0.3$ or $x = 6.3$

Rebecca has 9 cards, each with a number on it.

1		2		3	
2	2	3	4	5	6	6	7	9
								4

She picks three cards at random, without replacement.
Rebecca multiplies the three numbers to get a score.

Calculate the probability that the score is an even number

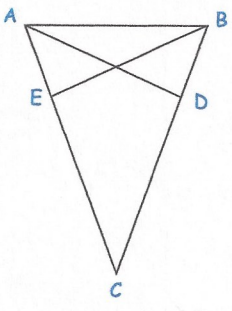
$1 - P(\text{odd})$

$$1 - \left(\frac{4}{9} \times \frac{3}{8} \times \frac{2}{7}\right)$$

$$\frac{20}{21}$$

ABC is an isosceles triangle in which AC = BC.
D and E are points on BC and AC such that CE = CD.

Prove triangles ACD and BCE are congruent.



$AC = BC$ (sides of isosceles tri.)

Angles $ACD = BCE$ (shared)

$CE = CD$ (given)

$\therefore$ SAS