1st February
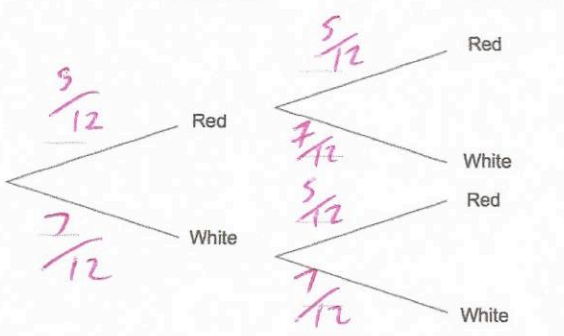
Solve $m^2 + 24m + 63 = 0$

$$(m + 21)(+ 3) = 0$$

$$m = -21 \text{ or } m = -3$$

Solve $m^2 - 16m + 64 = 0$

$$(m - 8)(m - 8) = 0$$

$$m = 8$$

1st counter   2nd counter

$\frac{5}{12}$ Red

$\frac{5}{12}$ Red

$\frac{7}{12}$ White

$\frac{5}{12}$ Red

$\frac{7}{12}$ White

$\frac{7}{12}$ White

George has a bag of marbles.
There are 5 red and 7 white marbles.
George takes out a marble at random
and records the colour.
George puts the marble back into the
bag and then takes out another marble.

Complete the probability tree diagram.

Find the probability that the two marbles
are red

$$\frac{5}{12} \times \frac{5}{12} = \frac{25}{144}$$

James has organised a game to raise
money for charity at a local fair.
He rolls a fair six sided dice and flips a
fair coin.
If the coin lands on heads, the number
on the dice is **squared**.
If the coin lands on tails, the number on
the dice is **cubed**.

Each person pays 50p to play.
If they score above 30, they win £1
The game is played 450 times.

How much money does James raise for
charity?

$$450 \times 50p = £225$$

	1	2	3	4	5	6
H	1	4	9	16	25	36
T	1	8	27	64	125	216

$$P(\text{above } 30) = \frac{4}{12} = \frac{1}{3}$$

$$\frac{1}{3} \text{ of } 450 = 150 \text{ winners}$$

$$225 - 150 = £75$$