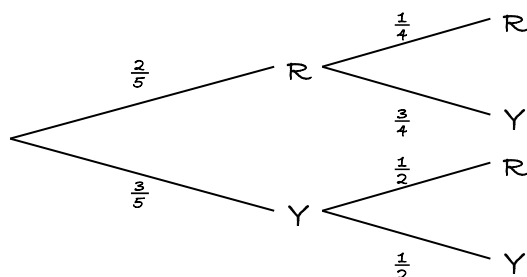


## Section 2: Probability distributions

### Solutions to Exercise level 2

1.



$$P(0 \text{ yellow discs}) = P(RR) = \frac{2}{5} \times \frac{1}{4} = \frac{1}{10}$$

$$P(1 \text{ yellow disc}) = P(RY) + P(YR) = \left(\frac{2}{5} \times \frac{3}{4}\right) + \left(\frac{3}{5} \times \frac{1}{2}\right) = \frac{3}{10} + \frac{3}{10} = \frac{3}{5}$$

$$P(2 \text{ yellow discs}) = P(YY) = \frac{3}{5} \times \frac{1}{2} = \frac{3}{10}$$

$r$	0	1	2
$P(X=r)$	$\frac{1}{10}$	$\frac{3}{5}$	$\frac{3}{10}$

2.

$r$	1	2	3	4
$P(X=r)$	$\frac{1}{10}$	$\frac{1}{5}$	$\frac{3}{10}$	$\frac{2}{5}$

3.  $2k + 4k + 6k + 8k = 1$

$$20k = 1$$

$$k = \frac{1}{20}$$

$r$	2	4	6	8
$P(Y=r)$	$\frac{1}{10}$	$\frac{1}{5}$	$\frac{3}{10}$	$\frac{2}{5}$

## Edexcel AS Maths Probability 2 exercise solutions

4.  $k + 4k + 9k + 16k = 1$

$$30k = 1$$

$$k = \frac{1}{30}$$

$r$	1	2	3	4
$P(Z = r)$	$\frac{1}{30}$	$\frac{2}{15}$	$\frac{3}{10}$	$\frac{8}{15}$