



Age 14+ Level ★
Worksheet 1 – Solutions

1. Flipping Coins

The probability of getting heads at least 3 times is $\frac{5}{16}$

rich.maths.org/12932/solution

2. Boy or Girl

She is likely to make a profit of £2500

rich.maths.org/14016/solution

3. Collecting Marbles

9 marbles must be taken out of the bag

rich.maths.org/10109/solution

4. Tying the Rope

The probability that both pieces of rope are tied together is $\frac{2}{3}$

rich.maths.org/6736/solution

5. Swapping Sweets

The probability is $\frac{2}{5}$

rich.maths.org/12532/solution

These problems are adapted from UKMT (ukmt.org.uk) and WMC (competition.ac) problems.



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Worksheet 1 – Solutions

1. Odd Dice

The probability that the sum is an odd number is $\frac{1}{2}$

<https://nrich.maths.org/13666/solution>

2. Takeaway Time

11 teenagers only like Indian

nrich.maths.org/7178/solution

3. XOXOXO

The probability is $\frac{1}{10}$

nrich.maths.org/12790/solution

4. CD Collection

There are 72 different ways to arrange the CDs

nrich.maths.org/12876/solution

5. Switch On

There are 13 different ways

nrich.maths.org/10187/solution

6. One or Both?

30 pupils took the exam

nrich.maths.org/794/solution

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Worksheet 1 – Solutions

1. Medal Ceremony

There are 60 ways to allocate the medals

rich.maths.org/2875/solution

2. Domino Match

The probability that the dominoes match is $\frac{7}{18}$

rich.maths.org/12862/solution

3. Face Order

There are 72 different ways to order the faces

rich.maths.org/13158/solution

4. Vegtown Elections

40% voted for the Broccoli Party

rich.maths.org/12597/solution

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Worksheet 2 – Solutions

1. Two Girls

There are 15 boys in the class

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2. Phone Call

There are 280 possible numbers

rich.maths.org/10173/solution

3. Dropouts

72% of the students who graduate have never been to France

rich.maths.org/13798/solution

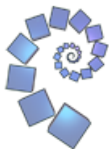
4. Winning Marble

To maximize her chances, she must put one white marble in one box, and the remaining 19 marbles in the other box.

If she does this, the probability that she will go free is $\frac{28}{38}$

rich.maths.org/13647/solution

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Worksheet 3 – Solutions

1. Descending Deal

The probability that they are dealt in descending order is $\frac{1}{24}$

rich.maths.org/9430/solution

2. Counting Kangaroos

4 kangaroos are drawn using only one colour

rich.maths.org/12620/solution

3. Different Digital Clock

There are 360 times when all the digits are different

rich.maths.org/2531/solution

4. Numbers or Letters?

Game One, the letters game, gives you the best chance of winning

rich.maths.org/12861/solution

These problems are adapted from UKMT (ukmt.org.uk) and WMC (competition.ac) problems.