The numbers 1 to 12 inclusive are placed in a hat. John takes a number out of the bag at random. What is the probability it is a 5?

What is the probability it is an odd number?

Increase £8 by 30%

Increase £8 by 35%

Find the area of this triangle

Complete the table of values for $y = 3x + 3$.

<table>
<thead>
<tr>
<th>$x$</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>$y$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

On the grid draw the graph of $y = 3x + 3$ values of $x$ from 0 to 5.
<table>
<thead>
<tr>
<th>2nd June</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Work out 10 cubed</td>
<td>Work out the cube root of 64</td>
</tr>
<tr>
<td>Write down £1.50 as a fraction of £5</td>
<td>Write that answer as a percentage</td>
</tr>
<tr>
<td>Solve 5y – 2 = 28</td>
<td>Solve 6(y + 2) = 54</td>
</tr>
<tr>
<td>Match each scatter graph to the best description of the type and strength of correlation.</td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="Strong positive correlation" /></td>
<td><img src="image" alt="Weak positive correlation" /></td>
</tr>
<tr>
<td><img src="image" alt="No correlation" /></td>
<td><img src="image" alt="Weak negative correlation" /></td>
</tr>
<tr>
<td><img src="image" alt="Strong negative correlation" /></td>
<td></td>
</tr>
</tbody>
</table>

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3rd June

| Arrange these in order, starting with the smallest. |
| :---: | :---: | :---: | :---: |
| $2^2$ | $\sqrt[3]{27}$ | $1^3$ | $\sqrt{25}$ |

<table>
<thead>
<tr>
<th align="center">Expand $y(6 - 2y^2)$</th>
<th align="center">Expand $4h(2h - 3)$</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th align="center">What is the bearing of Donhampton from Leek?</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th align="center">A helicopter is 25 miles from Castletown on a bearing of 200°. Mark it’s location on the map.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th align="center">Factorise completely</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th align="center">$10xy + 6x^2$</th>
</tr>
</thead>
</table>
### 4th June

<table>
<thead>
<tr>
<th>Simplify</th>
<th>Simplify</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a + a + a + a)</td>
<td>(5a + 3b - a - 5b)</td>
</tr>
</tbody>
</table>

Victor is \(x\) years old. David is four years younger than Victor, 

Write an expression for David’s age

Nicky is half of Victor’s age. 

Write an expression for Nicky’s age.

### Starter
- Soup
- Mushrooms

### Main
- Chicken
- Beef
- Fish

Hannah had soup for her starter. 

Write down all her possible options

Translate shape A using the vector \( \begin{pmatrix} 0 \\ 4 \end{pmatrix} \)

Enlarge shape A by scale factor 3, using point P as the centre of enlargement.
5th June

Write 52% as a decimal

Write 0.55 as a fraction in its simplest form

\[
\frac{5}{9} \times 27
\]

Bag 1 contains £9.20 in 5p coins.
Bag 2 contains twice as many coins as Bag 1.
If Bag 2 contains only 50p coins.

How much more money is in Bag 2 than Bag 1?

Complete the table

<table>
<thead>
<tr>
<th></th>
<th>Square</th>
<th>Rhombus</th>
<th>Trapezium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of pairs</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>of parallel sides</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diagonals always</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>equal in length</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Susan has some beads in a bag.
5 of the beads are orange.
3 of the beads are purple.
The rest of the beads are pink.
Susan takes a bead from the bag at random.
The probability that she takes a pink bead is \(\frac{3}{5}\)

How many pink beads are in the bag before Susan takes a bead?

Name: ______________

5-a-day

Foundation

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6th June

|   +   |   =   | 0 |
|   +   |   =   | 3 |

Use the cards above to complete the sums.

| 5 | 4 | 2 | -1 | -5 |

Benjamin is starting a new training program. Each month he increases the distance he runs by \(\frac{3}{10}\). In month 1 he ran 20 miles.

How far does Benjamin run in month 2?

How far does Benjamin run in total over the first three months?

Using the information that

\[42 \times 31 = 1302\]

write down the value of

(a) \(42 \times 62\)

(b) \(42 \times 32\)

Find the value of:

\[3w + 1\]

\[\frac{10}{10}\]

When \(w = 7\)

Three quarters of a number is 27. What is two ninths of the number?
### 7th June

<table>
<thead>
<tr>
<th>Work out $3 \times (2 + 4)$</th>
<th>2</th>
<th>5</th>
<th>10</th>
<th>= 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Put the correct operations into the boxes to make the sum correct</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Work out the cube of 4</th>
<th>Work out the square of 18.5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>x</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>y</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Complete the table of values for the graph $x + y = 6$

On the grid, draw the graph of $x + y = 6$.

Mr Jones is given a pay rise. Before the pay rise he received £10 an hour. After the pay rise he received £25 an hour.

Calculate the percentage increase.
<table>
<thead>
<tr>
<th>8th June</th>
<th>5-a-day</th>
</tr>
</thead>
<tbody>
<tr>
<td>(-2 \times 6)</td>
<td>(-14 \div -7)</td>
</tr>
<tr>
<td>Caroline says if you subtract two consecutive square numbers, the answer is always odd.</td>
<td></td>
</tr>
<tr>
<td>Is she correct?</td>
<td></td>
</tr>
<tr>
<td>Sophie says if you square a number, the answer is always bigger.</td>
<td></td>
</tr>
<tr>
<td>Explain why she is wrong.</td>
<td></td>
</tr>
<tr>
<td>Calculate the nth term</td>
<td>Work out the 20th term in the sequence</td>
</tr>
<tr>
<td>15 17 19 21 23 25</td>
<td></td>
</tr>
<tr>
<td>Mrs Jenkins is organising a charity raffle. She sells 300 tickets for £3 each. The probability that someone wins a prize is 0.2 Each prize cost £8 The profit is donated to charity.</td>
<td>Work out how much money Mrs Jenkins donates to charity.</td>
</tr>
</tbody>
</table>
Find the mean of:

21  25  27  20  23  26  28  22

Simplify

5 \times 7w

Simplify

2w \times 3w

Rotate shape A 180° about (0, 0)

Reflect shape A using the mirror line x = 1

Share $320 in the ratio 2:3
### 10th June

**What percentage of the shape is shaded?**

| 7 | 4 | 3 | 8 | 12 | 8 | 7 | 1 | 5 | 7 | 7 |

Find the mode

Find the range

**Find the median**

**Find x**

The garden has a triangular vegetable patch and the rest of the garden is grass. Calculate the area of the garden that is grass.

**Factorise**

\[15y + 20\]

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11th June

Write as a mixed number
\[
\frac{11}{3}
\]

Harry wants to shade whole squares so that exactly \[
\frac{4}{5}
\] is shaded. Explain why this is not possible.

Martin says the next number after a square number is always prime. He is wrong.

Write down two square numbers where the next number is not prime.

\[
\frac{7}{20} + \frac{1}{5}
\]

\[
\frac{1}{6} \div \frac{2}{3}
\]

Write 100 as a product of primes
### 12th June

A tea costs 45p

What is 45p as a fraction of £1.35

Give your answer in its simplest form.

<table>
<thead>
<tr>
<th>Expand 5(a + c)</th>
<th>Expand 10(x + 4)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Calculate the nth term</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 7 11 15 ... ...</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Is 501 a term in the sequence?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Use your calculator to work out the value of</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\frac{2.12 \times 5.2}{9.21 - 2.8}$</td>
</tr>
</tbody>
</table>

Write down all the figures on your calculator display.

<table>
<thead>
<tr>
<th>Calculate the area of the circle</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Circle with 6km radius]</td>
</tr>
</tbody>
</table>

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### 13th June

**Using the digits 5, 8 and 9 only once in each number:**

Write as many three-digit numbers as you can.

| Draw all the lines of symmetry on the pentagon. |
| What is the order of rotational symmetry? |

**Expand**

| $5(x + 3)$ | $y(2y + 1)$ |

| A car repair garage records information about the cars it repairs. |
| Put a cross in the box to indicate whether each of the following is discrete or continuous data. |

**The weight of the car**

| Discrete | Continuous |

**The number of gears**

| Discrete | Continuous |

**The expression in each block is found by multiplying the two blocks directly beneath it.**

Find the missing expressions.

| $2x$ | $3x$ | $x$ |
14th June

7 7 7 8 2 8 7 7 5

Find the mode

Find the range

Find the median

Simplify

9m – 2m

Simplify

m + m + m + m + m

George is going on holiday to Poland

George changes £180 into Zloty.
The exchange rate is £1 = 5 Zloty

Work out how many Zloty George gets for £180.

James went on a journey.

How many times did James stop for a break?

How far did James travel in total?

How long was James stationary for?
<table>
<thead>
<tr>
<th>15th June</th>
<th>5-a-day</th>
<th>Foundation</th>
</tr>
</thead>
</table>

**Find x**

**Find y**

A bag contains 10 discs. Each disc is labelled with a different number from 1 to 10. A disc is chosen from the bag at random. Write down the probability that the chosen disc is:

(a) a number less than four

(b) a prime number

In one week, Gina spent $x$ minutes on the internet. Sammy spent 15 minutes less than Gina. Write down an expression for how long Sammy spent on the internet.

Find the bearing of D from C

Find the bearing of C from D

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16th June

The number in each block is found by adding the two blocks directly beneath it.

Find the missing numbers.

![Image](2.8, 1.5, 1.2)

| 2.8 | 1.5 | 1.2 |

Find the mean of

4 2 5 8 6 4 2 3 5 1

ABCD is a parallelogram.
Write down the coordinates of D

![Graph](Image)

Use the graph to convert 6 gallons to litres.

Use the graph to convert 10 litres to gallons.
### 17th June

<table>
<thead>
<tr>
<th>Nottingham</th>
<th>Manchester</th>
<th>Liverpool</th>
<th>Glasgow</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>56</td>
<td>346</td>
<td>348</td>
</tr>
</tbody>
</table>

What is the distance between Manchester and Glasgow?

Write down the names of the two cities which are least distance apart?

Scott has a rope 8 metres long. He says, “I need 9 pieces each 0.89 metres long.”

Will Scott have enough ribbon?

Rectangle B is an enlargement of rectangle A.

What is the scale factor of the enlargement?

Write these numbers in order of size. Start with the smallest number.

\[
\begin{align*}
65\% & \quad \frac{7}{10} & \quad 0.68 & \quad \frac{2}{3} & \quad \frac{3}{5}
\end{align*}
\]
### 18th June

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calculate the area of the triangle</td>
<td></td>
</tr>
<tr>
<td>How many matches did the team play?</td>
<td></td>
</tr>
<tr>
<td>Increase $5000 by 3%</td>
<td></td>
</tr>
<tr>
<td>Decrease 600cm by 40%</td>
<td></td>
</tr>
<tr>
<td>Using the information that (3.9 \times 62 = 241.8)</td>
<td></td>
</tr>
<tr>
<td>write down the value of (a) (3.9 \times 620)</td>
<td></td>
</tr>
<tr>
<td>(b) (39 \times 0.62)</td>
<td></td>
</tr>
<tr>
<td>The timetable for a flight from London to Beijing is shown.</td>
<td></td>
</tr>
<tr>
<td>Departure from London</td>
<td>5 August</td>
</tr>
<tr>
<td>Arrival in Beijing</td>
<td>6 August</td>
</tr>
<tr>
<td>How long should the journey take? Give your answer in hours and minutes.</td>
<td></td>
</tr>
<tr>
<td>When it is 1pm in London, it is 8pm in Beijing.</td>
<td></td>
</tr>
</tbody>
</table>
Find x

A DVD costs £6.79 each.

Work out the cost of 5 DVDs.

Complete the table of values for $y = 6 - 4x$.

<table>
<thead>
<tr>
<th>x</th>
<th>-1</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>y</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>-6</td>
</tr>
</tbody>
</table>

On the grid, draw the graph of $y = 6 - 4x$ for values of $x$ from $-1$ to $3$.

How many dots are needed to make Pattern 10?
### 20th June

**Find the value of** $2x + 3$

When $x = 10$

**Find the value of** $10 - 2x$

When $x = 4$

<table>
<thead>
<tr>
<th>Simplify $m + m + m + m + m$</th>
<th>Simplify $6y + 10 + 2y - 8$</th>
</tr>
</thead>
</table>

**Find the circumference of the circle**

![Circle with diameter 12m](image)

**The exchange rate to change pounds into Indian rupees is** £1 = 90 Rupees

Complete the table below.

<table>
<thead>
<tr>
<th>Pounds</th>
<th>0</th>
<th>1</th>
<th>10</th>
<th>50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rupees</td>
<td>0</td>
<td>90</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Draw a conversion graph for converting between pounds and rupees.
21st June

Solve $3w = 12$

Solve $w - 7 = 4$

Arrange in order from smallest to largest.

200 ml  60 litres  50 ml  6 litres  600 litres

Find the area

The pie chart shows information about the counters in the bag.

What fraction of the counters are white? Give your answer in its simplest form.

What fraction of the counters are red? Give your answer in its simplest form.

There are 48 counters in the bag.

Work out how many counters are black.
### 22nd June

A map has a scale of 1cm : 3 miles. On the map, the distance between two towns is 7cm.

What is the actual distance between the two towns?

<table>
<thead>
<tr>
<th>Triangle</th>
<th>Draw a rectangle with the same area as this triangle.</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="triangle.png" alt="" /></td>
<td></td>
</tr>
</tbody>
</table>

Solve 2\(y - 4 = 29\)  
Solve 10\((y + 3) = 51\)

Which is larger?  
\(\frac{1}{2} \text{ of } 280\) or \(\frac{3}{8} \text{ of } 400\)

Miss Jones gives her class a test. The test is out of 50 marks.

Here are their scores.

<table>
<thead>
<tr>
<th>41</th>
<th>27</th>
<th>29</th>
<th>35</th>
<th>32</th>
</tr>
</thead>
<tbody>
<tr>
<td>38</td>
<td>32</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Work out the median.
### 23rd June

#### Solve

<table>
<thead>
<tr>
<th>Expression</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>( w - 2 = 5 )</td>
<td>( w = 7 )</td>
</tr>
<tr>
<td>( \frac{w}{5} = 2 )</td>
<td>( w = 10 )</td>
</tr>
</tbody>
</table>

#### Geometry

**Question:** Shown is a regular pentagon. What is the size of each interior angle?

**Answer:**

Each interior angle of a regular pentagon is calculated as:

\[
\text{Interior Angle} = \frac{(n-2) \times 180}{n}
\]

For a pentagon (\( n = 5 \)),

\[
\text{Interior Angle} = \frac{(5-2) \times 180}{5} = \frac{3 \times 180}{5} = 108\degree
\]

#### Drawing Views

**Front Elevation:**

Draw the front elevation of the cube.

**Side Elevation:**

Draw the side elevation of the cube.

**Plan View:**

Draw the plan view of the cube.

#### Coin Question

**Question:** Shown below is a 2 pence coin. Each 2 pence coin is 0.185 cm thick. Stephen builds a tower of 450 2p coins. How tall is the tower?

**Answer:**

The height of the tower is calculated as:

\[
\text{Height} = \text{Number of Coins} \times \text{ Thickness of One Coin}
\]

\[
\text{Height} = 450 \times 0.185 = 83.25\text{ cm}
\]

**Note:**

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### 24th June

**Peter buys 297 packets of crisps at 21p each.**

Estimate the total cost.

**Fred is 26 years old.**

Hannah is $y$ years younger than Fred.

Write an expression for Hannah’s age.

---

This timetable shows the times (GMT) of trains between London and Paris.

<table>
<thead>
<tr>
<th>London</th>
<th>Paris</th>
</tr>
</thead>
<tbody>
<tr>
<td>04 21</td>
<td>07 11</td>
</tr>
<tr>
<td>05 19</td>
<td>08 09</td>
</tr>
<tr>
<td>06 39</td>
<td>09 29</td>
</tr>
<tr>
<td>07 59</td>
<td>10 49</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Paris</th>
<th>London</th>
</tr>
</thead>
<tbody>
<tr>
<td>14 40</td>
<td>17 30</td>
</tr>
<tr>
<td>15 28</td>
<td>18 18</td>
</tr>
<tr>
<td>17 00</td>
<td>19 50</td>
</tr>
<tr>
<td>18 49</td>
<td>21 39</td>
</tr>
</tbody>
</table>

**How long does each journey take?**

**Tom arrives in Paris at 09:29.**

He spends the next 7 hours visiting tourist attractions in Paris.

What is the time of the next train he can catch back to London?

**Rob takes a counter at random from bag 1 and a counter at random from bag 2.**

Write a list of all the possible combinations of the two counters that Rob can take.
## 25th June

**Shown below is a glass of water.**

![Image of a glass of water]

**Below are four estimates of the amount of water in the glass. Circle the most appropriate estimate.**

- 15ml
- 1.5L
- 150ml
- 15L

---

**The express bus from Dublin to Belfast takes \( x \) minutes.**

The standard bus takes 42 minutes longer.

Write down an expression for the time the standard bus takes.

- \( (x - 42) \) minutes

**The airplane takes half the time the express bus takes.**

Write down an expression for the time the airplane takes.

- \( \frac{x}{2} \) minutes

---

**Hannah is recording the number of letters in each word in an article.**

These are the first ten lengths.

<table>
<thead>
<tr>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>3</td>
<td>7</td>
<td>3</td>
<td>6</td>
</tr>
</tbody>
</table>

Work out the median.

**The 11\(^{th}\) word has 4 letters.**

Tick the box which describes what affect this will have on the mean.

- The mean will **decrease**
- The mean will remain the same
- The mean will **increase**
Solve

\[8w = 48\]

Solve

\[5y + 3 = 68\]

Draw the radius

Draw the diameter

The scale of the map is 1cm = 100m.
Work out the real distance between the school and the shop.
Give your answer in metres.

Express 40p as a fraction of £5

Rosie is tiling her bathroom wall.
The wall is 6m by 3m.
Each square tile is 50cm by 50cm.
Each tile cost £3.

Calculate the cost of tiling the wall.
27th June

Which is larger?

\[
\frac{17}{30} \quad \frac{2}{3}
\]

Using the information that

\[47 \times 23 = 1081\]

write down the value of \(470 \times 230\)

The graph shows the distance from home at each time.

How far was Natalie from home at 10:30?

What happened between 12:00 and 13:00

Calculate Natalie’s speed from 10:00 and 12:00

Each member of a club is going to receive a badge.
There are 560 members.

The badges are sold in packs of 9.

Work out the least number of packs of badges that need to be bought.
<table>
<thead>
<tr>
<th>28th June</th>
</tr>
</thead>
<tbody>
<tr>
<td>Last year Melissa was paid £2200 per month.</td>
</tr>
<tr>
<td>Last year Natalie was paid £3200 per month.</td>
</tr>
<tr>
<td>Melissa’s salary is increased by ( \frac{3}{5} ).</td>
</tr>
<tr>
<td>Natalie’s salary is increased by ( \frac{7}{6} ).</td>
</tr>
<tr>
<td>Who is paid more each month this year?</td>
</tr>
</tbody>
</table>

\[
\frac{3}{8} + \frac{2}{5} = \frac{7}{10} \div \frac{5}{6}
\]

<table>
<thead>
<tr>
<th>Find a shape that is congruent to A.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Find a shape that is mathematically similar to B</td>
</tr>
</tbody>
</table>

A jar of coffee used to contain 540g.
New packets contain one-fifth less.
Work out how much the new packet contains.

Work out the surface area of this cuboid

\[
\text{Surface Area} = 2(7 \times 11) + 2(11 \times 11) + 2(7 \times 11) = 154 \text{ cm}^2
\]
Estimate the value of

\[
\frac{908}{2.03}
\]

Mary has 9 blue socks and 6 red socks.

If she selects one sock at random, what is the probability she selects a red sock?

The cost of a taxi journey is worked out by the rule.

£2 plus 50p per mile

Work out the cost of a 30 mile journey.

Find the area of the shape below

[Diagram of a shape with dimensions 9 cm, 2 cm, 5 cm, and 4 cm]
**30th June**

**Shown are the shoe sizes for Year 7.**

**How many year 7s are there?**

**What is the range of the shoe sizes?**

<table>
<thead>
<tr>
<th>Shoe Size</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>15</td>
</tr>
<tr>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>7</td>
<td>3</td>
</tr>
</tbody>
</table>

**Work out**

\[15 + 3 \times 2\]

**Work out**

\[20 \div 2 + 12 \div 4\]

**Expand**

\[2w(3w - 5)\]

**Arrange in order from smallest to largest**

\[
\frac{3}{10} \quad 29\% \quad 34.5\% \quad \frac{1}{3} \quad \frac{6}{25}
\]