

Subject Challenge



MATHS

Have a go at some of the different
problem-solving tasks in this booklet!

$$\begin{array}{r} 1) \ 49 \\ + \ 87 \\ \hline \end{array}$$

$$\begin{array}{r} 2) \ 76 \\ + \ 39 \\ \hline \end{array}$$

$$\begin{array}{r} 3) \ 93 \\ + \ 56 \\ \hline \end{array}$$

$$\begin{array}{r} 4) \ 24 \\ + \ 89 \\ \hline \end{array}$$

$$\begin{array}{r} 5) \ 88 \\ + \ 45 \\ \hline \end{array}$$

$$\begin{array}{r} 6) \ 66 \\ + \ 47 \\ \hline \end{array}$$

$$\begin{array}{r} 7) \ 59 \\ + \ 48 \\ \hline \end{array}$$

$$\begin{array}{r} 8) \ 74 \\ + \ 46 \\ \hline \end{array}$$

$$\begin{array}{r} 9) \ 55 \\ + \ 81 \\ \hline \end{array}$$

$$\begin{array}{r} 10) \ 74 \\ + \ 28 \\ \hline \end{array}$$

$$\begin{array}{r} 11) \ 40 \\ + \ 93 \\ \hline \end{array}$$

$$\begin{array}{r} 12) \ 65 \\ + \ 48 \\ \hline \end{array}$$

$$\begin{array}{r} 13) \ 80 \\ + \ 27 \\ \hline \end{array}$$

$$\begin{array}{r} 14) \ 83 \\ + \ 49 \\ \hline \end{array}$$

$$\begin{array}{r} 15) \ 38 \\ + \ 82 \\ \hline \end{array}$$

$$\begin{array}{r} 16) \ 67 \\ + \ 28 \\ \hline \end{array}$$

$$\begin{array}{r} 17) \ 33 \\ + \ 64 \\ \hline \end{array}$$

$$\begin{array}{r} 18) \ 33 \\ + \ 22 \\ \hline \end{array}$$

$$\begin{array}{r} 19) \ 93 \\ + \ 56 \\ \hline \end{array}$$

$$\begin{array}{r} 20) \ 49 \\ + \ 71 \\ \hline \end{array}$$

$$\begin{array}{r} 22) \ 84 \\ + \ 49 \\ \hline \end{array}$$

$$\begin{array}{r} 23) \ 35 \\ + \ 78 \\ \hline \end{array}$$

$$\begin{array}{r} 24) \ 65 \\ + \ 55 \\ \hline \end{array}$$

$$\begin{array}{r} 25) \ 55 \\ + \ 47 \\ \hline \end{array}$$

$$\begin{array}{r} 26) \ 92 \\ + \ 41 \\ \hline \end{array}$$

$$\begin{array}{r} 27) \ 86 \\ + \ 46 \\ \hline \end{array}$$

$$\begin{array}{r} 28) \ 66 \\ + \ 54 \\ \hline \end{array}$$

$$\begin{array}{r} 29) \ 37 \\ + \ 63 \\ \hline \end{array}$$

$$\begin{array}{r} 30) \ 81 \\ + \ 52 \\ \hline \end{array}$$

$$\begin{array}{r} 31) \ 46 \\ + \ 67 \\ \hline \end{array}$$

$$\begin{array}{r} 32) \ 19 \\ + \ 35 \\ \hline \end{array}$$

Coded Columns

| | | | | | | | | | | | | | |
|----|----|-----|----|----|----|-----|-----|-----|-----|----|----|-----|-----|
| A | B | C | D | E | F | G | H | I | J | K | L | M | N |
| 88 | 76 | 111 | 54 | 55 | 81 | 107 | 102 | 133 | 106 | 50 | 98 | 100 | 113 |

| | | | | | | | | | | | | |
|----|----|----|-----|-----|-----|-----|----|----|----|----|-----|-----|
| O | P | Q | R | S | T | U | V | W | X | Y | Z | _ |
| 95 | 59 | 85 | 149 | 132 | 136 | 115 | 97 | 77 | 62 | 64 | 173 | 120 |

Why did the monster stand on his head?

He was

.....

Fill in the numbers to make the sum of each row, column and diagonal equal to 15.

| | | |
|---|---|---|
| | | 6 |
| | | 1 |
| 4 | 3 | 8 |

Use 2, 5, 7, 9

| | | |
|--|---|---|
| | | 4 |
| | 5 | 3 |
| | | 8 |

Use 1, 2, 6, 7, 9

Fill in the numbers to make the sum of each row, column and diagonal equal to 34

| | | | |
|----|----|---|----|
| 4 | 9 | 6 | 15 |
| | | | 1 |
| 11 | | | |
| 5 | 16 | 3 | 10 |

Use 2, 7, 8, 12, 13, 14

| | | | |
|---|----|----|----|
| 9 | | | 4 |
| | 3 | 10 | |
| | 13 | 8 | |
| 7 | | | 14 |

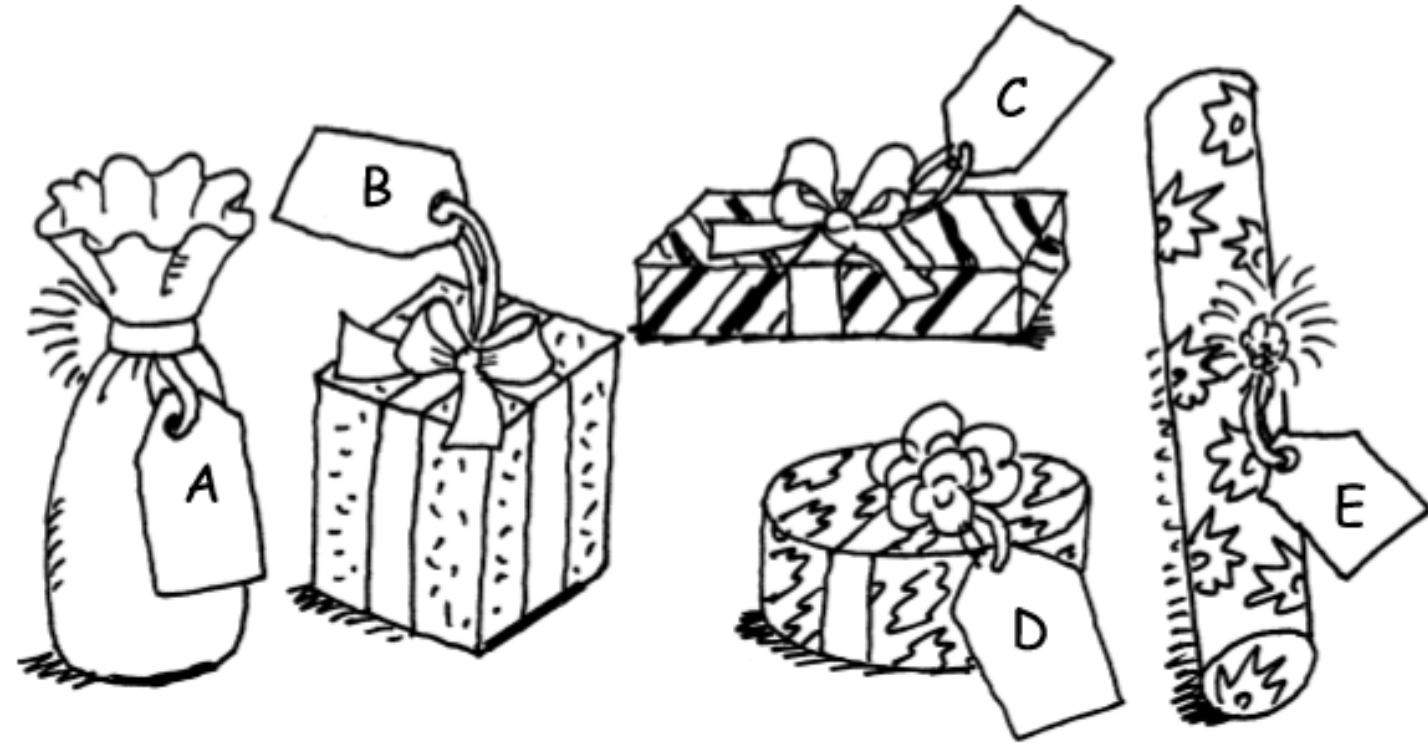
Use 1, 2, 5, 6, 11, 12, 15, 16

Maths Magic

Arrange three 1s, three 2s and three 3s in this square so that every row, column and diagonal adds to the same total.

| | | |
|--|--|--|
| | | |
| | | |
| | | |

Gurmit paid £21 for five presents.



Present Prices

For A and B he paid a total of £6.

For B and C he paid a total of £10.

For C and D he paid a total of £7.

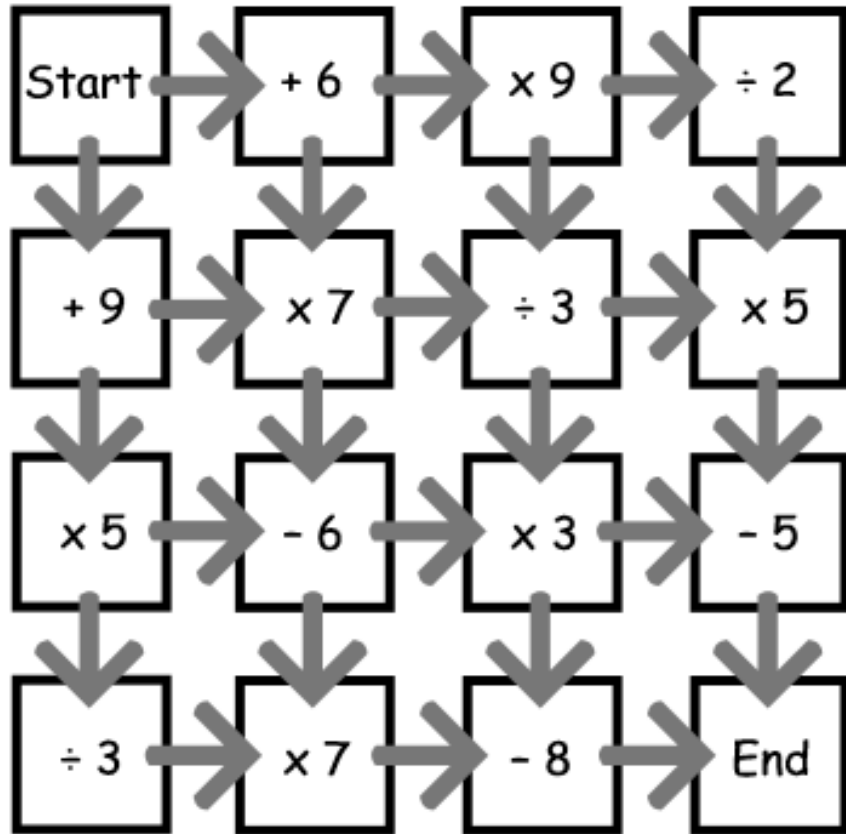
For D and E he paid a total of £9.

How much did Gurmit pay for each present?

Start with zero.

Find a route from 'Start' to 'End' that totals 100 exactly.

A-Mazing Maths

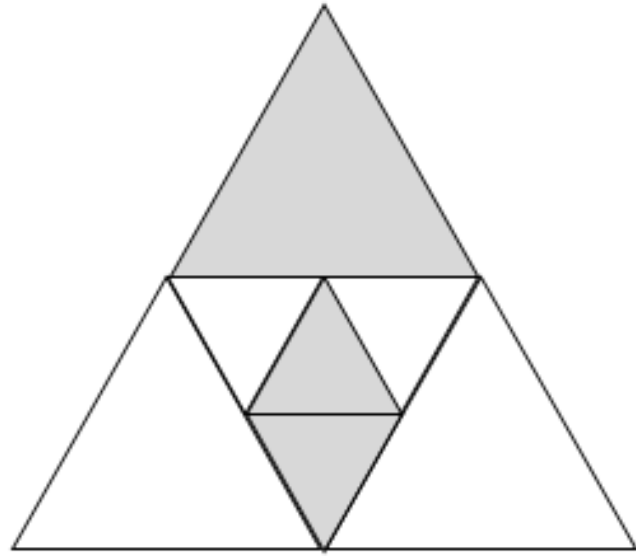


Which route has the highest total?

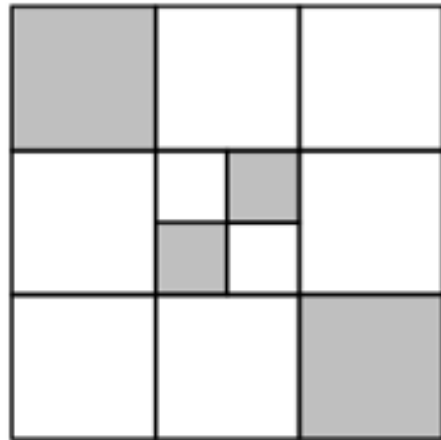
Which has the lowest total?

Now try some different starting numbers.

What fraction of this shape is shaded?

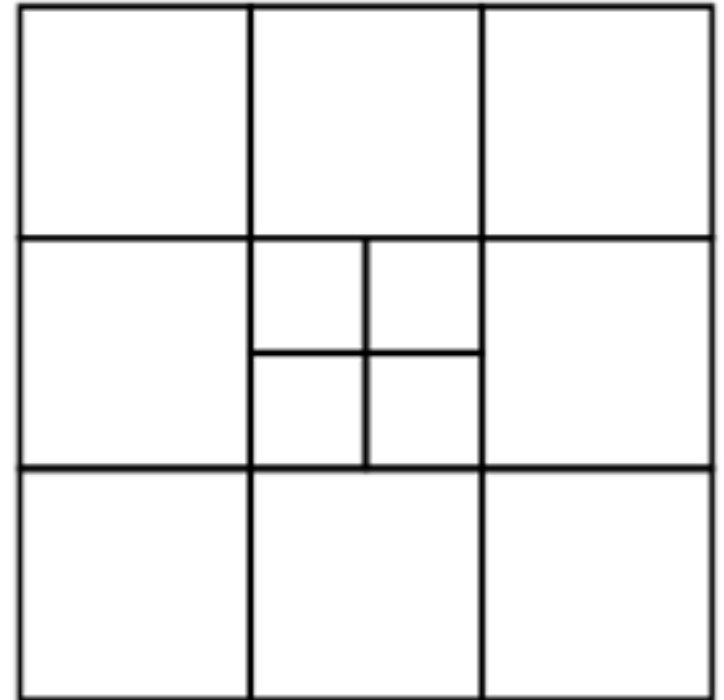


What fraction of this shape is shaded?



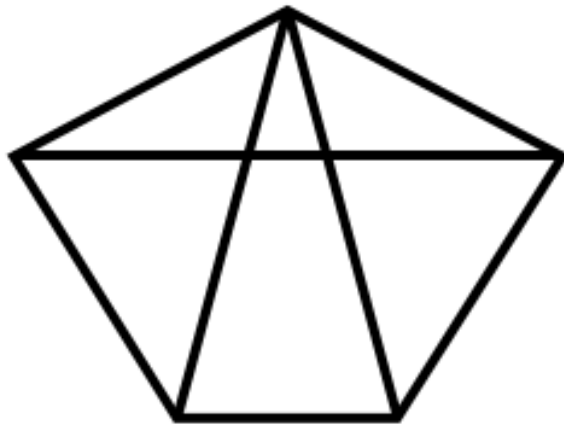
Fractions

Shade exactly $\frac{1}{6}$ of this shape

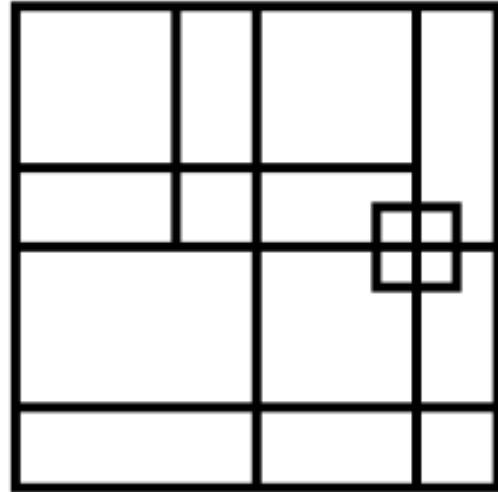


Finding shapes

1. How many triangles can you count?



2. How many squares can you count?

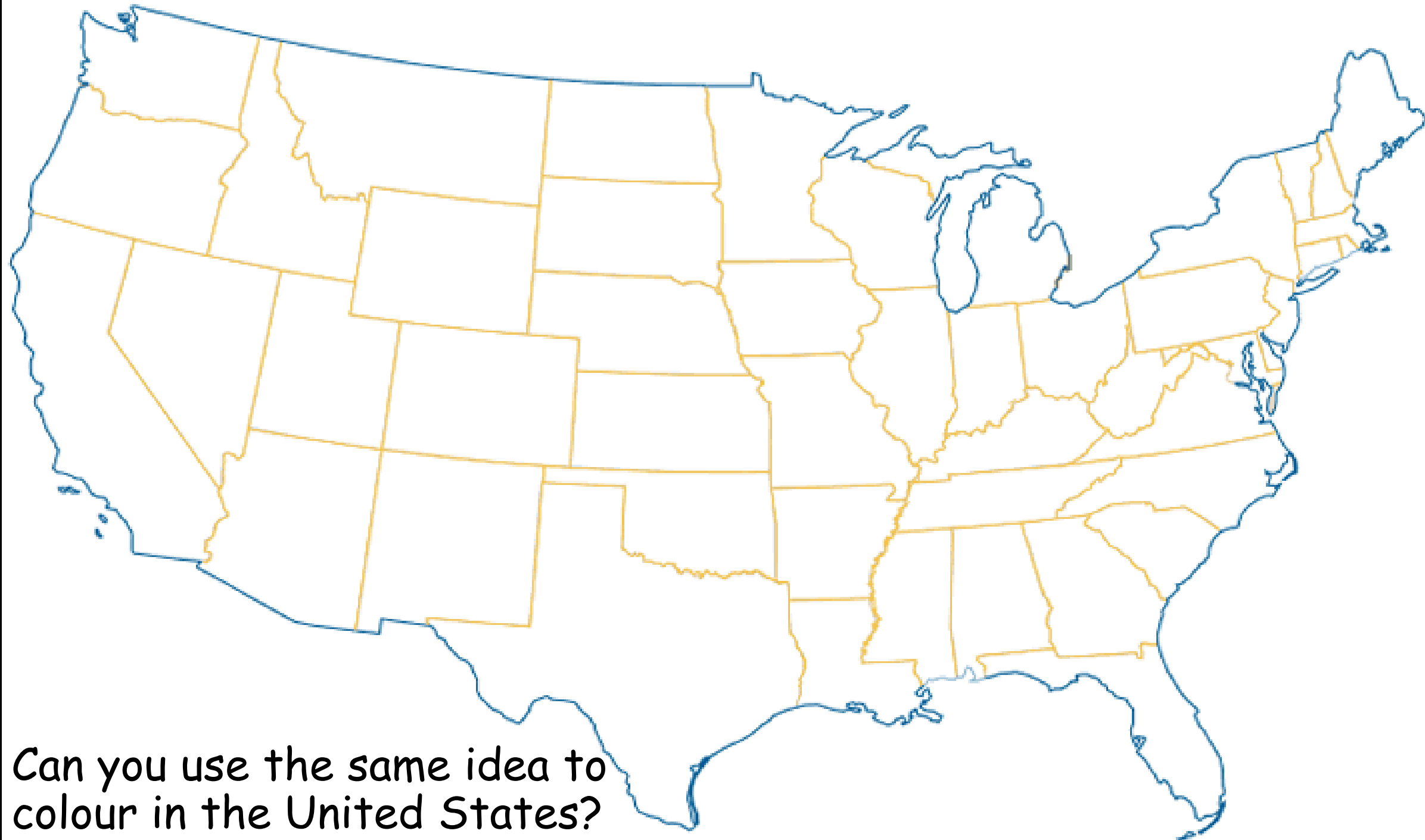


3. Draw your own diagram to count triangles.
Don't use too many lines!
How many triangles can a friend find?
Can you find more?

Colourful Maps

- This is a well-known maths problem.
- You have to try and colour in the map using only 4 colours.
- Sounds easy right?
- The problem is countries who share a boarder can't be the same colour, meaning for example that you can't have 2 green countries next to each other etc.





Can you use the same idea to colour in the United States?