

# Getting to Greater Depth in KS2 Maths

108 Greater Depth Questions  
for KS2 Maths Mastery

Year 6

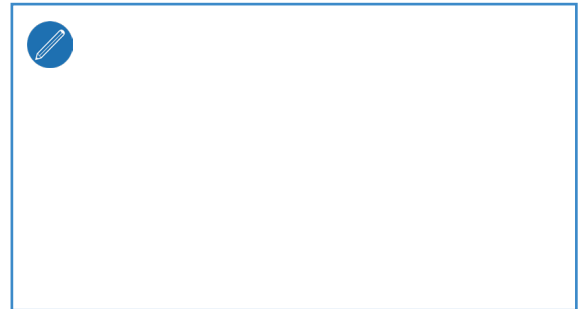
## Always, Sometimes, Never Questions: **Squares**

Please tick your answer to each question, and use the box on the right to explain the reasons why you think your answer is correct.

Are the following statements always, sometimes, or never true? What do you think?

1. There are 64 squares on a 8 x 8 chessboard

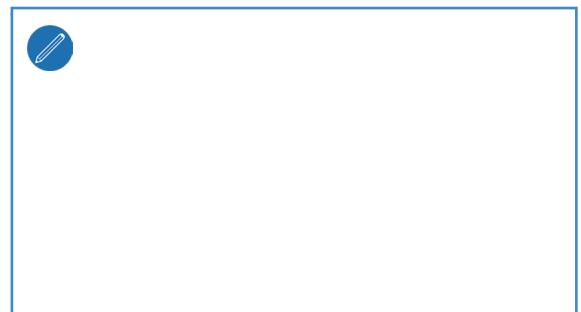
- Always
- Sometimes
- Never



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2. A square is also a rhombus

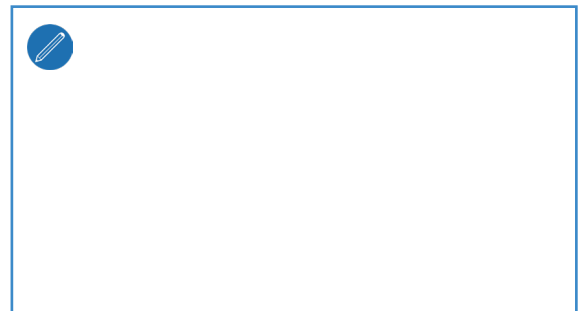
- Always
- Sometimes
- Never



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3. A square is smaller than a rectangle

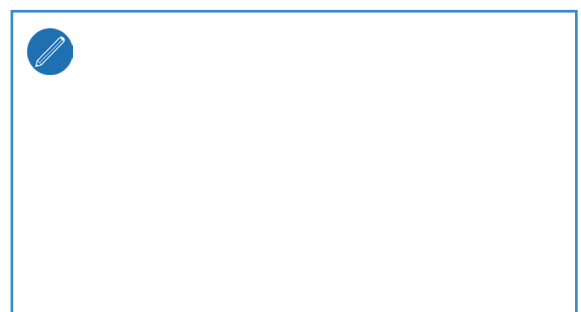
- Always
- Sometimes
- Never



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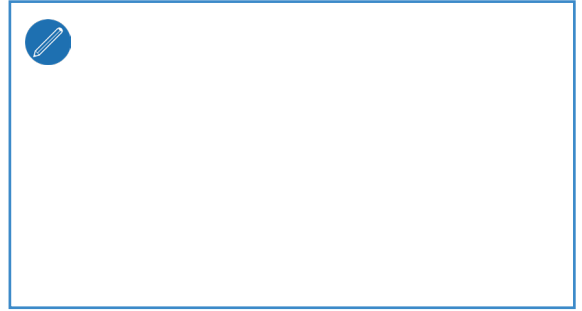
4. A square can be split into two triangles

- Always
- Sometimes
- Never



5. A square has 8 angles

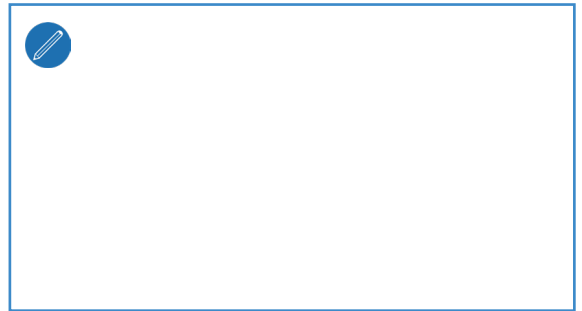
- Always
- Sometimes
- Never



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6. The diagonals of a square are longer than its sides

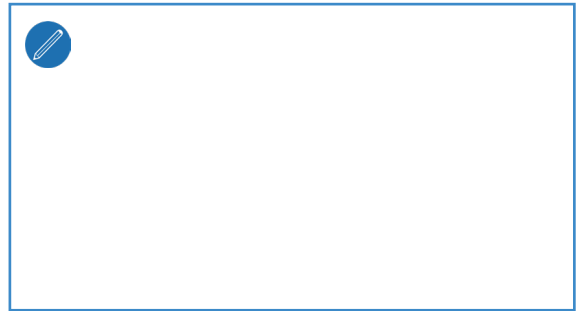
- Always
- Sometimes
- Never



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7. You can never have an irregular square

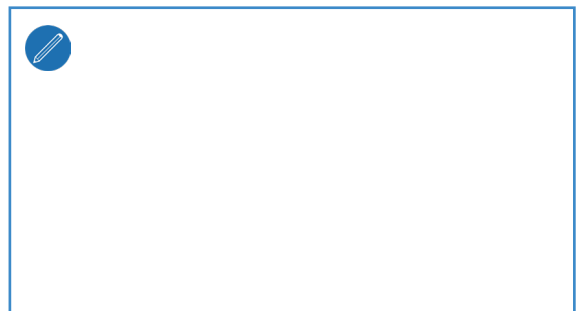
- Always
- Sometimes
- Never



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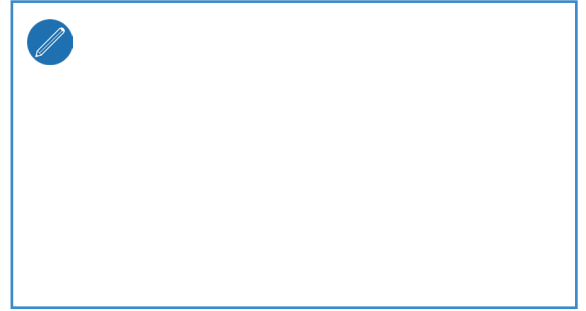
8. A square has four congruent edges

- Always
- Sometimes
- Never



9. The angles of a square add up to 90 degrees

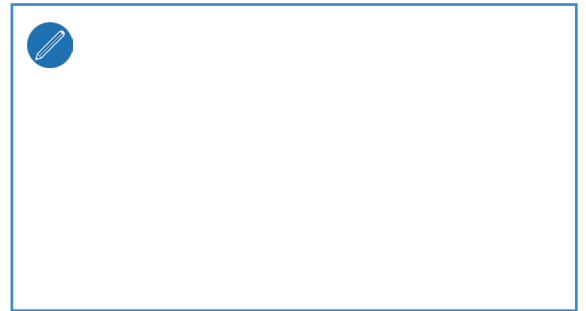
- Always
- Sometimes
- Never



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10. A square is half a rectangle

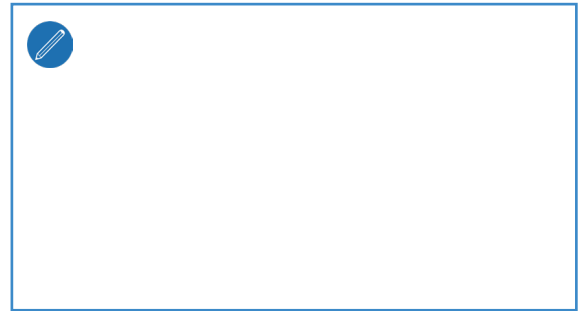
- Always
- Sometimes
- Never



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11. A square is an equilateral tetragon

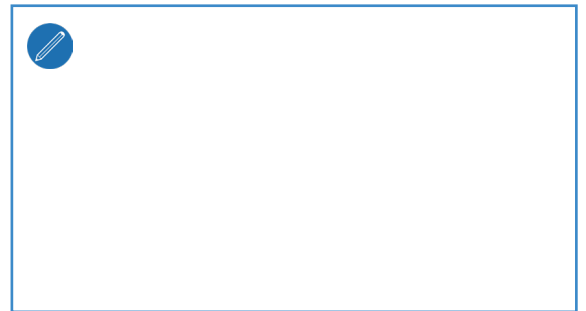
- Always
- Sometimes
- Never



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12. A square is never concave

- Always
- Sometimes
- Never



13. A square can also be a kite

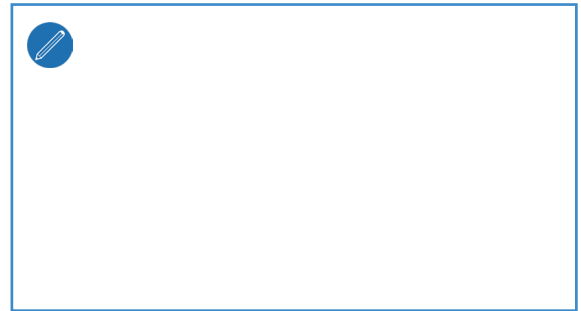
- Always
- Sometimes
- Never



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14. The diagonals of a square are the same as its sides

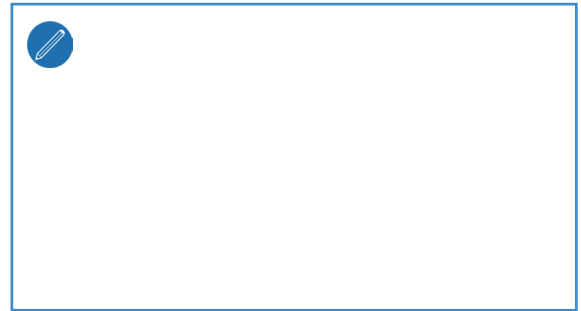
- Always
- Sometimes
- Never



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15. A square is a rectangle

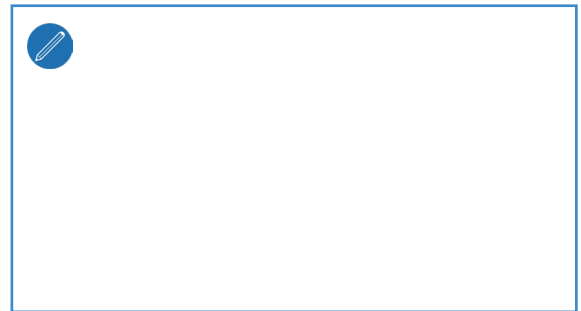
- Always
- Sometimes
- Never



---

16. A rectangle is a square

- Always
- Sometimes
- Never



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Were there any statements that you found a challenge?  
Why not look online for any words that you don't recognise.  
Share your ideas with the rest of the class.

Now it's time to add some more statements of your own! Think of some more Always, Sometimes, Never statements about squares and write them in the spaces below.

Always

Sometimes

Never



Always

Sometimes

Never



Always

Sometimes

Never



Always

Sometimes

Never





Always

Sometimes

Never

A large empty rectangular box with a blue border. In the top-left corner, there is a small blue circular icon containing a white pencil.

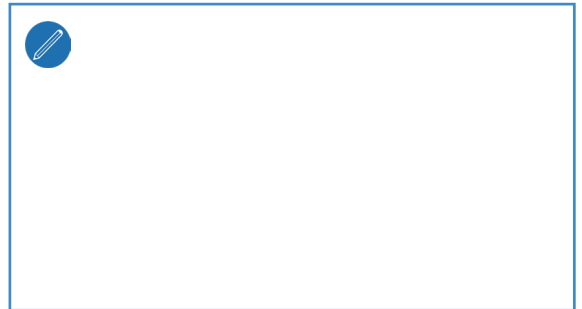
## Always, Sometimes, Never Questions: **X** and **-:-**

Please tick your answer to each question, and use the box on the right to explain the reasons why you think your answer is correct.

Are the following statements always, sometimes, or never true? What do you think?

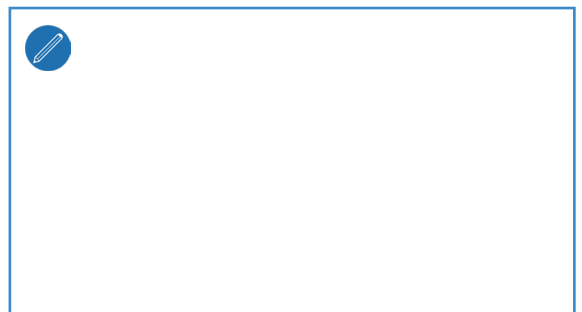
1. Multiplying is the same as adding

- Always
- Sometimes
- Never



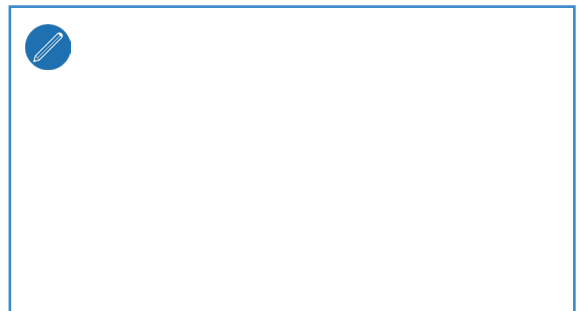
2. Multiplying a number always makes it bigger

- Always
- Sometimes
- Never



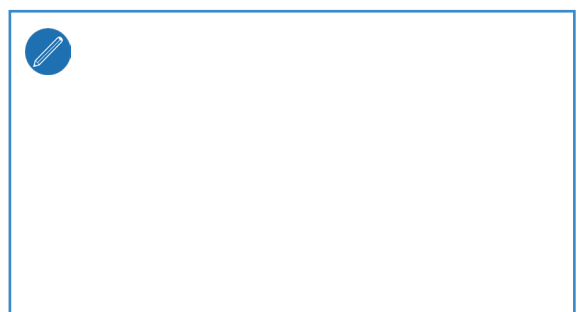
3. Dividing a number always makes it smaller

- Always
- Sometimes
- Never



4. Dividing is the same as subtracting

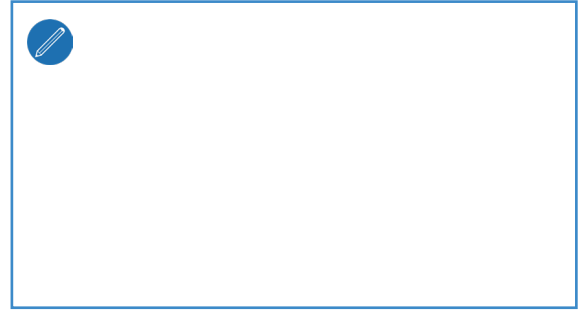
- Always
- Sometimes
- Never





5. A number can be multiplied by zero

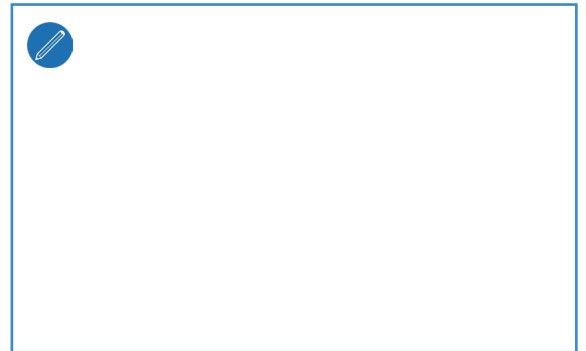
- Always
- Sometimes
- Never



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6. It doesn't matter which numbers come first when we divide

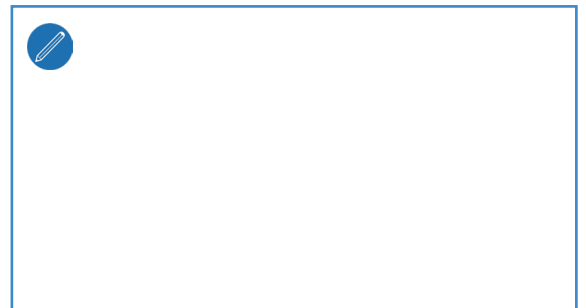
- Always
- Sometimes
- Never



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7. If a number ends in 0 it divides exactly by 10

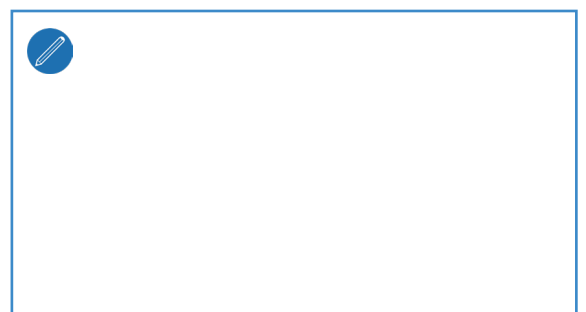
- Always
- Sometimes
- Never



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8. A multiple of 3 is a multiple of 6

- Always
- Sometimes
- Never



9. Dividing is harder than multiplying

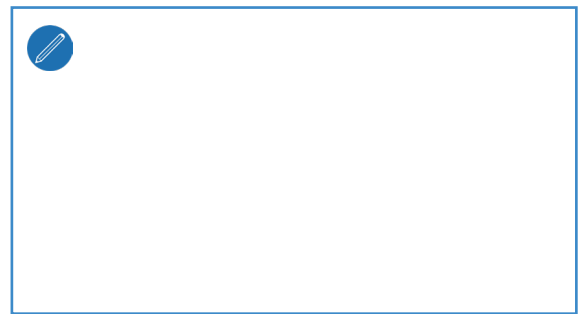
- Always
- Sometimes
- Never



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10. To multiply by 10 just add a zero

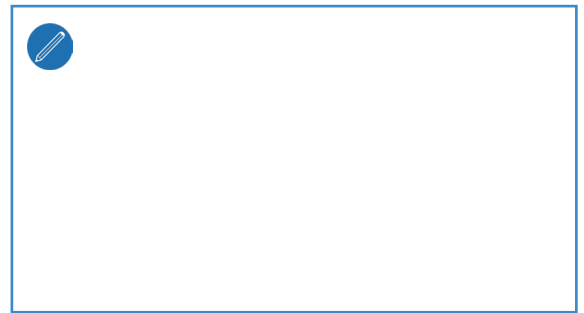
- Always
- Sometimes
- Never



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11. There are four different methods of multiplying

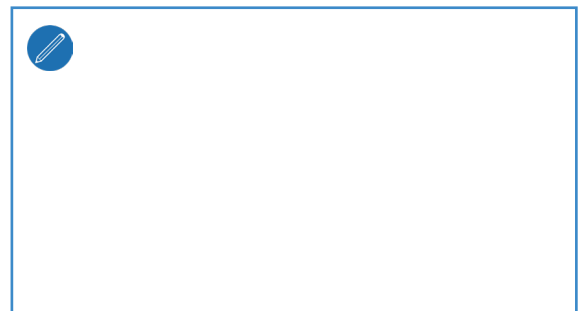
- Always
- Sometimes
- Never



---


12. Multiplying is faster than dividing

- Always
- Sometimes
- Never



13. The order in which you multiply two numbers does not change the answer


- Always
- Sometimes
- Never



---

14. If a number ends in 0 it divides exactly by 2


- Always
- Sometimes
- Never



---

15. The seven times table is 50% odd and 50% even


- Always
- Sometimes
- Never



---

16. The products of the five times table are odd

- Always
- Sometimes
- Never



---

17. Multiplying by 8 is the same as multiplying by 4 and doubling


- Always
- Sometimes
- Never



---

18. In the nine times table the sum of the digits always makes 9


- Always
- Sometimes
- Never



---

19. Multiplying a negative number by a positive number always increases the first number


- Always
- Sometimes
- Never



---

20. Multiplying a positive number by a number between 0 and 1 always increases the number

- Always
- Sometimes
- Never



---

21. Multiplying a positive number by a number greater than 1 always increases the number

- Always
- Sometimes
- Never



---

Were there any statements that you found a challenge?  
Why not look online for any words that you don't recognise.  
Share your ideas with the rest of the class.

## Always, Sometimes, Never Questions: **Triangles**

Please tick your answer to each question, and use the box on the right to explain the reasons why you think your answer is correct.


Are the following statements always, sometimes, or never true? What do you think?

1. At least two angles of a triangle are 90 degrees (or less)

Always

Sometimes

Never



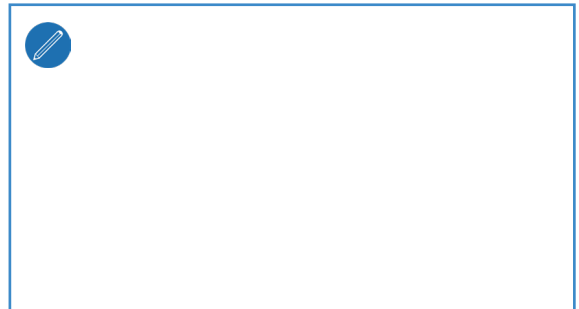
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2. A right-angled triangle has no lines of symmetry

Always

Sometimes

Never



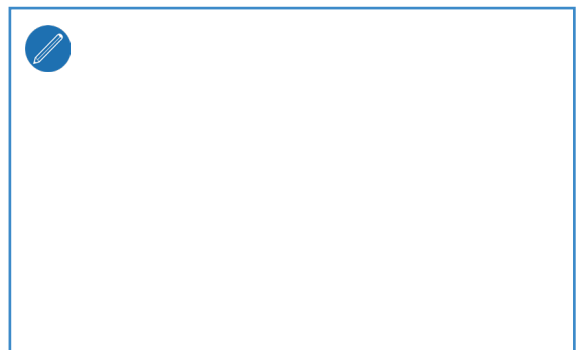
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3. An equilateral triangle has three sides of similar size

Always

Sometimes

Never



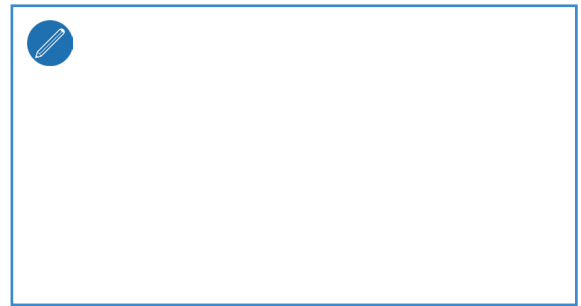
4. The longest side is opposite the smallest angle

- Always
- Sometimes
- Never



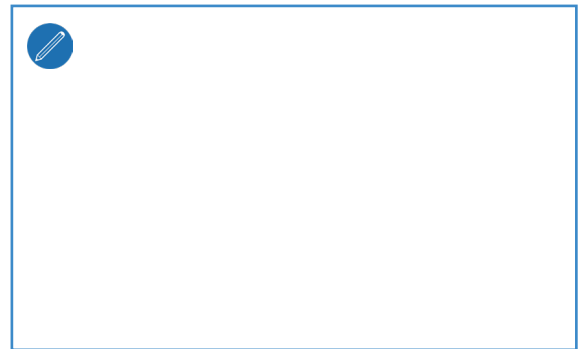
5. A scalene triangle has three acute angles

- Always
- Sometimes
- Never



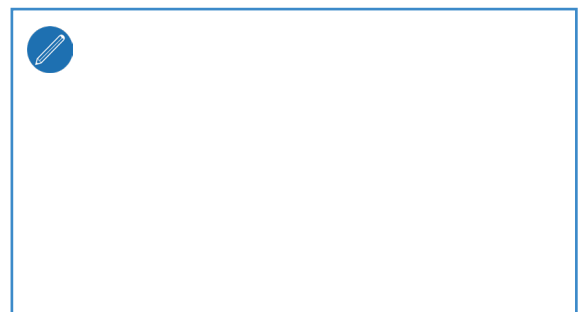
6. All the angles in a regular triangle are congruent

- Always
- Sometimes
- Never



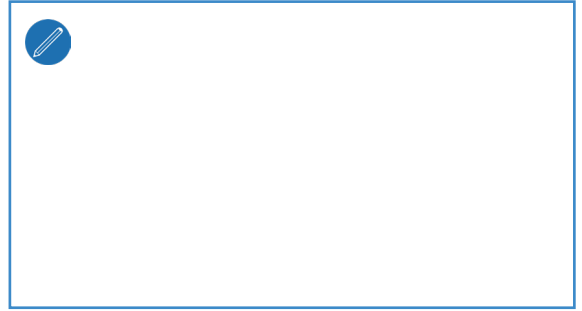
7. There are three types of right-angled triangle

- Always
- Sometimes
- Never



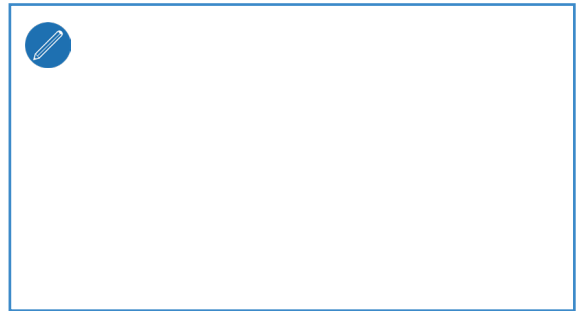
8. An obtuse triangle can have two obtuse angles

- Always
- Sometimes
- Never



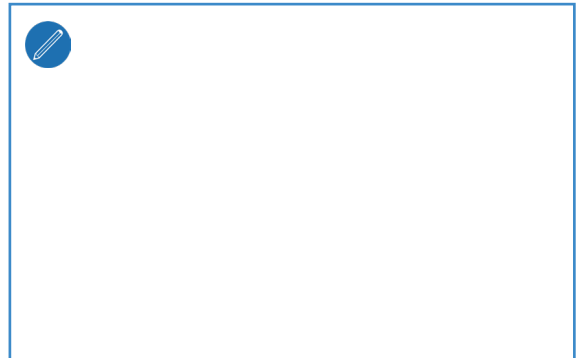
9. An isosceles triangle has three angles of  $60^\circ$

- Always
- Sometimes
- Never



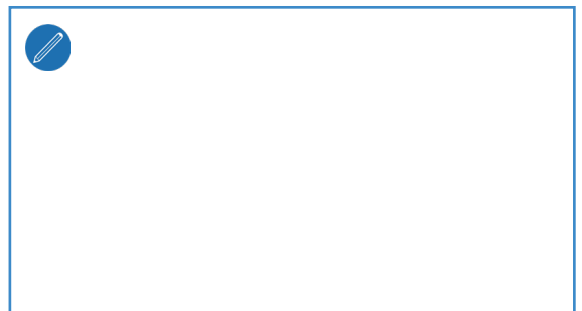
10. A triangle can be either obtuse, acute or right-angled

- Always
- Sometimes
- Never



11. All triangles have six angles

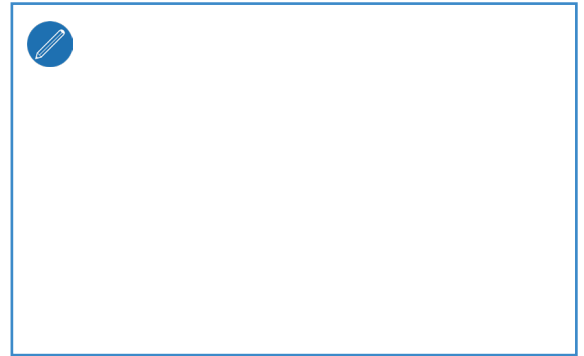
- Always
- Sometimes
- Never





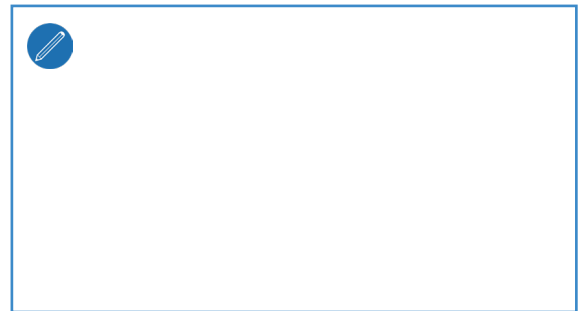
12. The longest side of any triangle is called its hypotenuse

- Always
- Sometimes
- Never



13. An equilateral triangle is made up of 9 smaller acute-angled triangles

- Always
- Sometimes
- Never



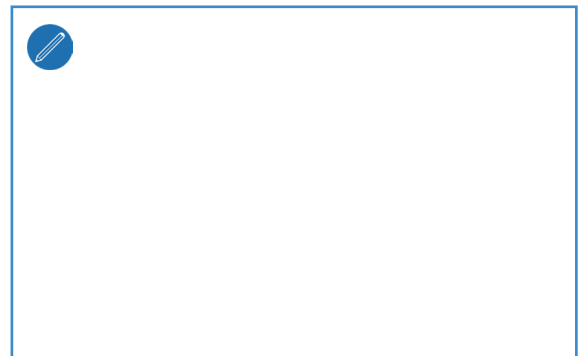
14. A right-angled triangle has one rectangular angle

- Always
- Sometimes
- Never



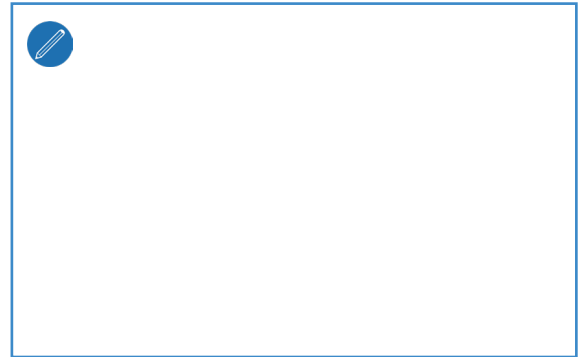
15. All the angles of an equilateral triangle are acute

- Always
- Sometimes
- Never



16. All the angles of an obtuse triangle are obtuse

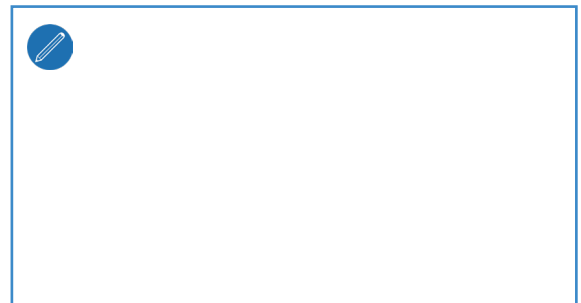
- Always
- Sometimes
- Never



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17. The angles at the base of a triangle are equal to each other

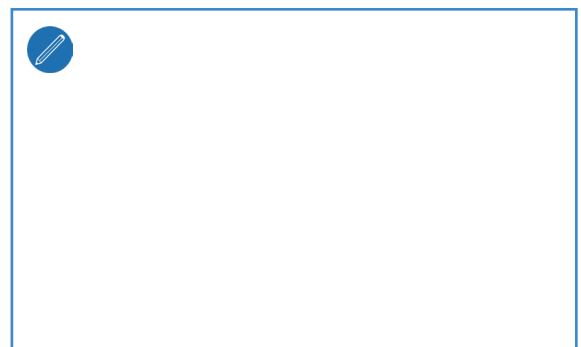
- Always
- Sometimes
- Never



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18. An equilateral triangle has only 2 lines of symmetry

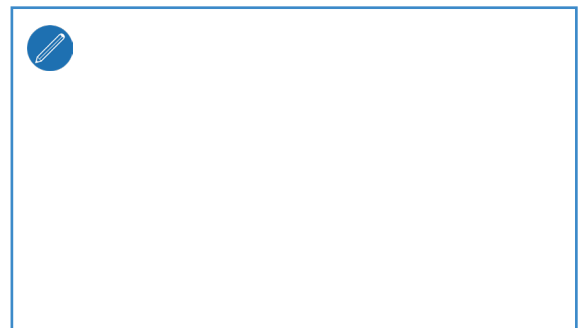
- Always
- Sometimes
- Never



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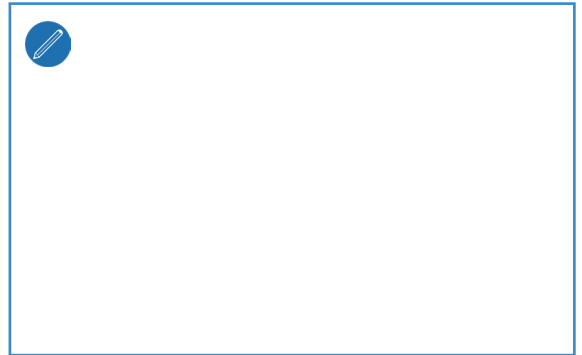
19. The angles of an isosceles triangle are all different

- Always
- Sometimes
- Never



20. Three angles of a triangle will equal two right-angles

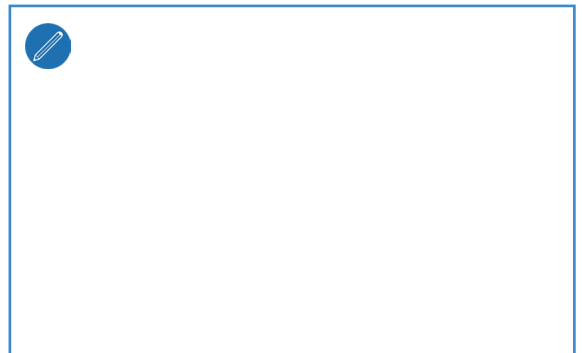
- Always
- Sometimes
- Never



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21. An isosceles triangle has at least one right-angle

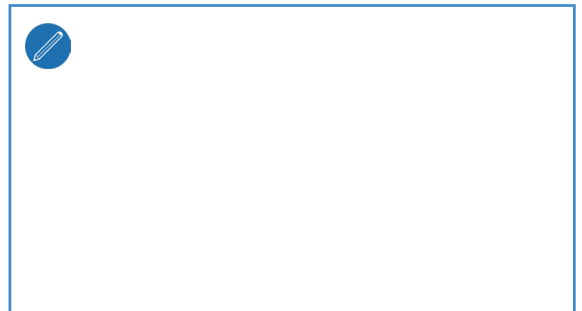
- Always
- Sometimes
- Never



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22. A scalene triangle has three acute angles

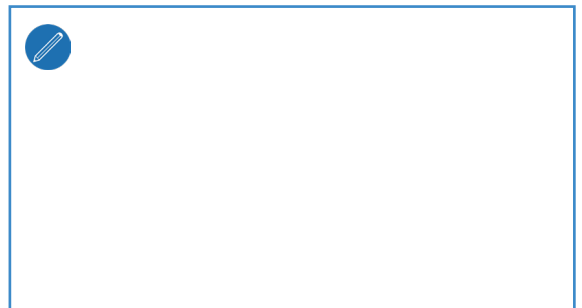
- Always
- Sometimes
- Never



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23. A triangle must have at least one acute angle

- Always
- Sometimes
- Never



24. A triangle can have more than one obtuse angle


- Always
- Sometimes
- Never



---

25. All triangles are congruent but not similar


- Always
- Sometimes
- Never



---

26. An equilateral triangle is also equiangular


- Always
- Sometimes
- Never



---

27. An equilateral triangle is also isosceles

- Always
- Sometimes
- Never



---

28. In any triangle, the greater side is opposite the greater angle

Always

Sometimes

Never



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Were there any statements that you found a challenge?

Why not look online for any words that you don't recognise.

Share your ideas with the rest of the class.

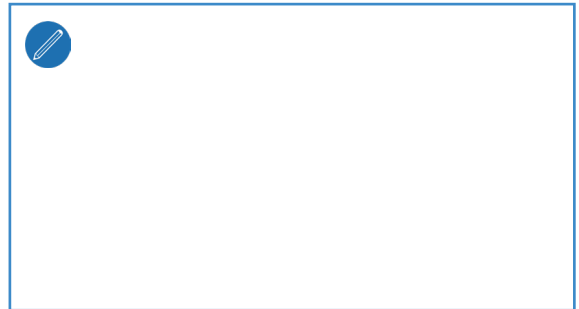
## Always, Sometimes, Never Questions: **Fractions**

Please tick your answer to each question, and use the box on the right to explain the reasons why you think your answer is correct.

Are the following statements always, sometimes, or never true? What do you think?

1. A fraction always has three parts

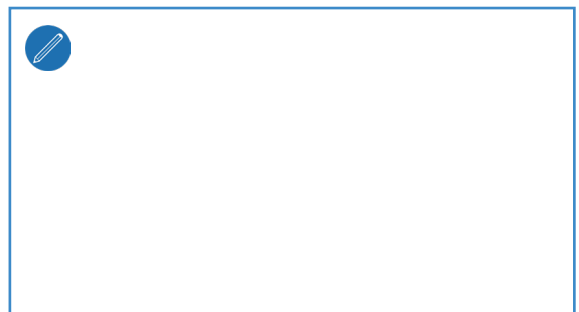
- Always
- Sometimes
- Never



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2. A denominator is the dividend of a fraction

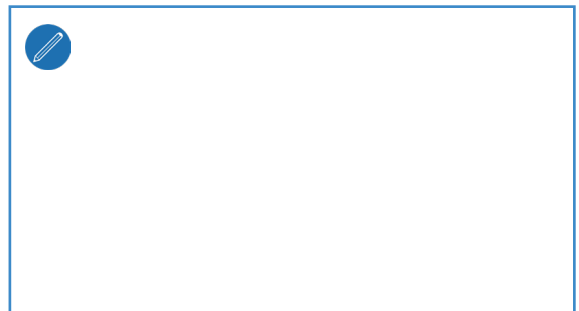
- Always
- Sometimes
- Never



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3. A numerator is always a positive integer

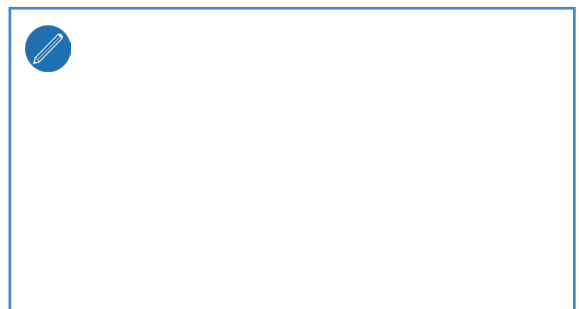
- Always
- Sometimes
- Never



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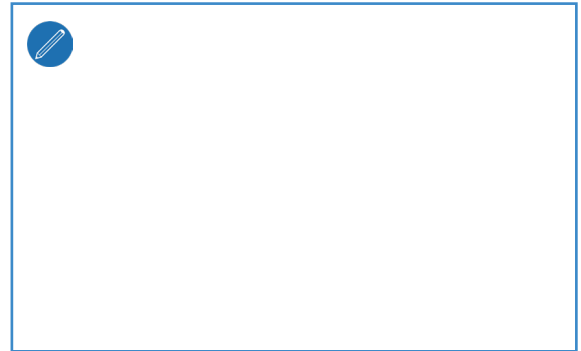
4. A numerator denotes the number of parts

- Always
- Sometimes
- Never



5. A denominator can sometimes be a decimal number

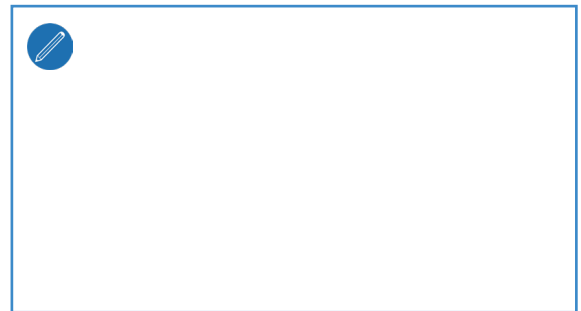
- Always
- Sometimes
- Never



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6. A numerator can be zero

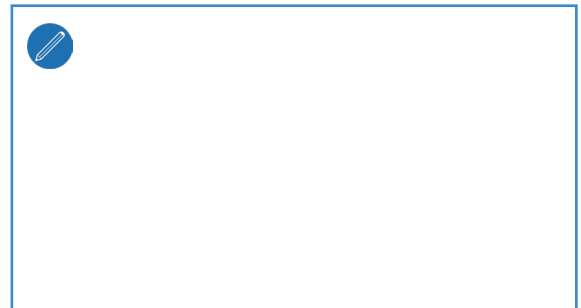
- Always
- Sometimes
- Never



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7. A denominator can be a negative number

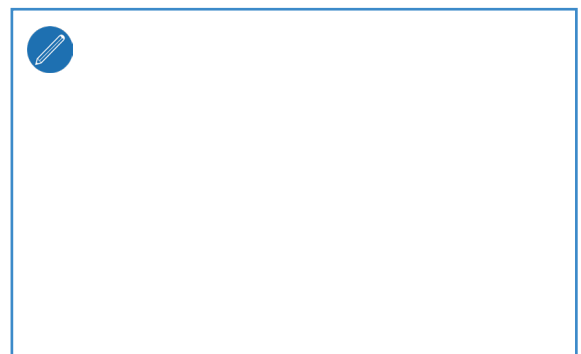
- Always
- Sometimes
- Never



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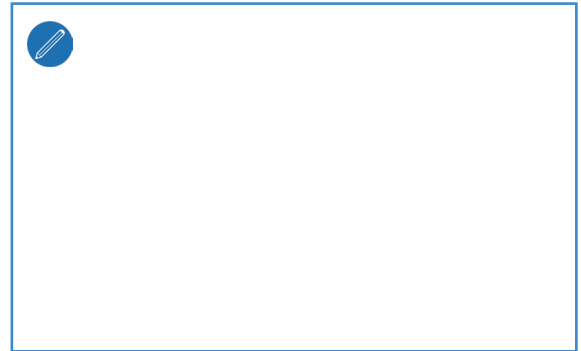
8. A proportion is another way of expressing a fraction

- Always
- Sometimes
- Never



9. In a common fraction the numerator is written above the line

- Always
- Sometimes
- Never



10. The smaller the denominator the bigger the fraction

- Always
- Sometimes
- Never



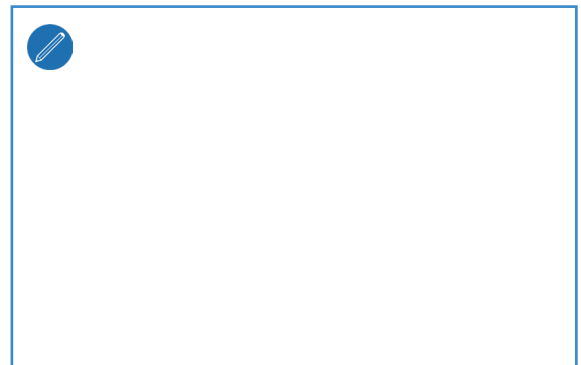
11. The vinculum is the line dividing the numerator and denominator

- Always
- Sometimes
- Never



12. A mixed number is both a whole number and an improper fraction


- Always
- Sometimes
- Never





13. An integer can be expressed as a fraction by dividing by 1


- Always
- Sometimes
- Never



---

14. The quotient is the denominator part of a mixed fraction


- Always
- Sometimes
- Never



---

15. An improper fraction is a fraction where the numerator is larger than the denominator


- Always
- Sometimes
- Never



---

16. An improper fraction can be converted into a mixed number by division

- Always
- Sometimes
- Never



---

17. A proper fraction is a fraction where the value of the denominator is smaller than the numerator

Always

Sometimes

Never



---

Were there any statements that you found a challenge?

Why not look online for any words that you don't recognise.

Share your ideas with the rest of the class

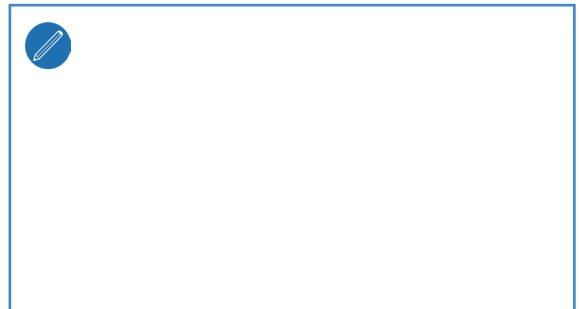
## Always, Sometimes, Never Questions: **Square Numbers**

Please tick your answer to each question, and use the box on the right to explain the reasons why you think your answer is correct.

Are the following statements always, sometimes, or never true? What do you think?

1. To square any number, multiply by 2

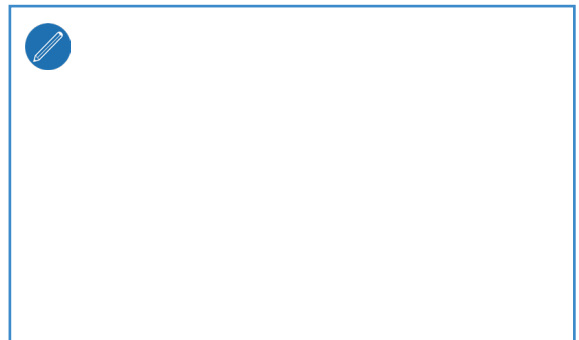
- Always
- Sometimes
- Never



---

2. A square number is always 1 more than a triangle number

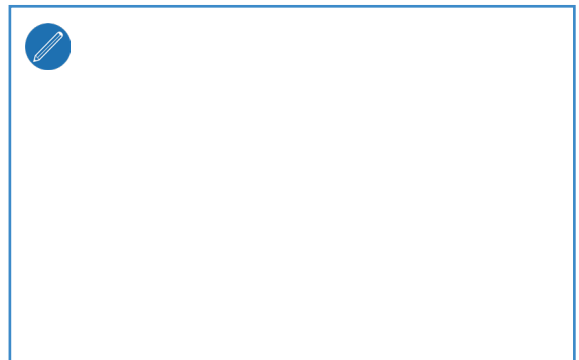
- Always
- Sometimes
- Never



---

3. If you add three primes together you will always make a square number

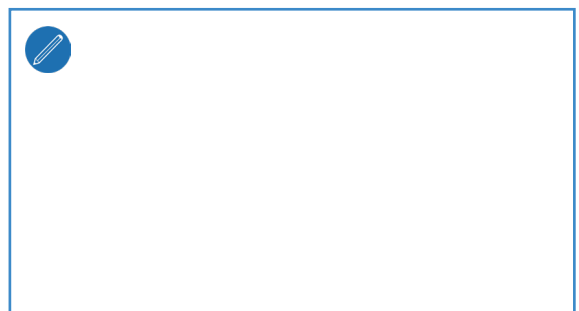
- Always
- Sometimes
- Never



---


4. Square numbers end in 0,1,4,5 or 9

- Always
- Sometimes
- Never



5. If you subtract a square number from the next square you will always get a prime


- Always
- Sometimes
- Never



---

6. If you multiply two consecutive numbers together you always make a square number


- Always
- Sometimes
- Never



---

7. Square numbers are composite numbers


- Always
- Sometimes
- Never



---

8. A square number is bigger than a triangle number

- Always
- Sometimes
- Never



---

9. A square number is twice as big as the original number

Always

Sometimes

Never



---

Were there any statements that you found a challenge?

Why not look online for any words that you don't recognise.

Share your ideas with the rest of the class.

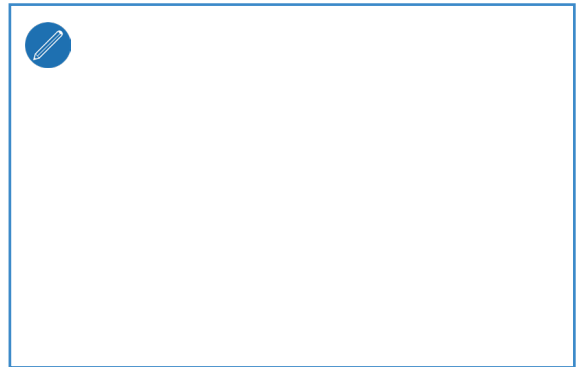
## Always, Sometimes, Never Questions: **General**

Please tick your answer to each question, and use the box on the right to explain the reasons why you think your answer is correct.

Are the following statements always, sometimes, or never true? What do you think?

1. When you cut a piece off a shape, you reduce its area and perimeter

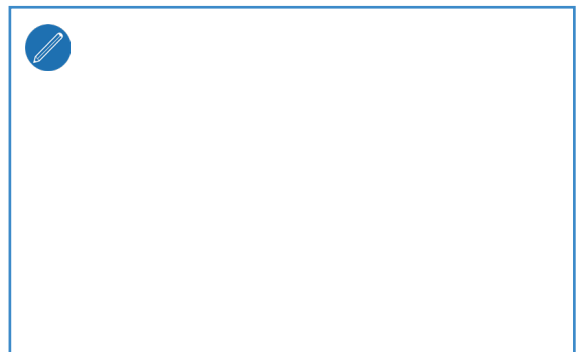
- Always
- Sometimes
- Never



---

2. When you cut a shape and rearrange the pieces, the area and the perimeter stay the same

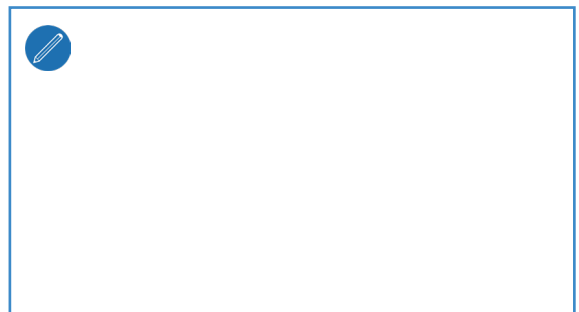
- Always
- Sometimes
- Never



---

3. All squares are rectangles

- Always
- Sometimes
- Never



4. An equilateral triangle is also isosceles


- Always
- Sometimes
- Never



---

5. A triangle can have 2 obtuse angles


- Always
- Sometimes
- Never



---

6. The diagonals of a rectangle cross at right-angles


- Always
- Sometimes
- Never



---

7. When you double the side of a square you double the area

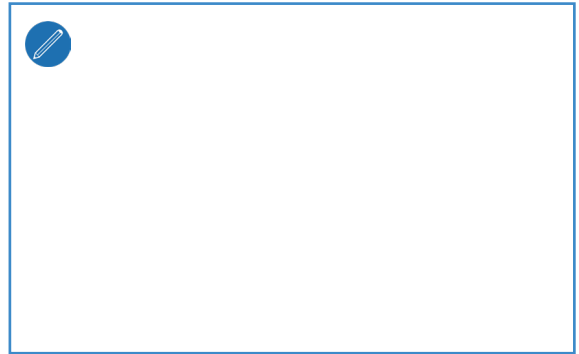
- Always
- Sometimes
- Never



---

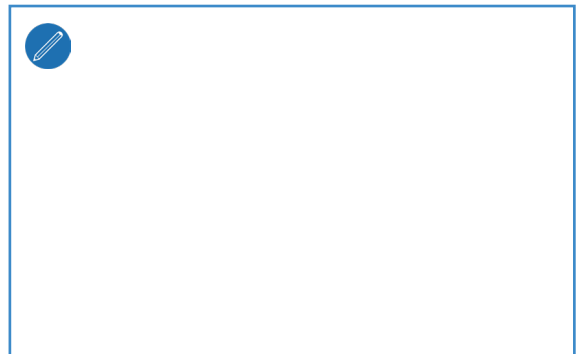
8. A parallelogram has rotational symmetry order of 4

- Always
- Sometimes
- Never



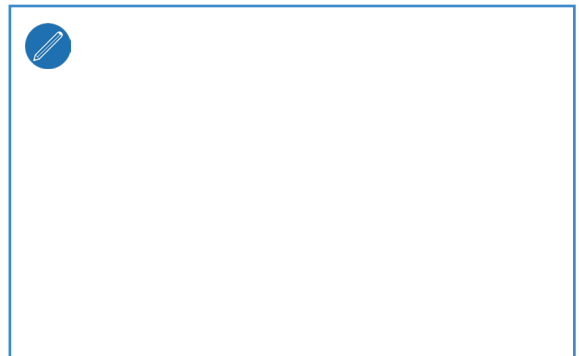
9. The largest side of a triangle is shorter than the sum of the lengths of the other 2 sides

- Always
- Sometimes
- Never



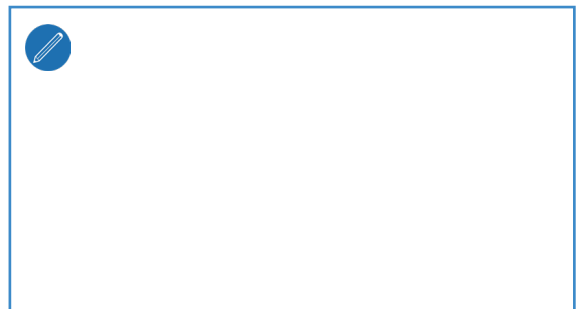
10. If 2 rectangles both have the same area, they must also have the same perimeter

- Always
- Sometimes
- Never



11. A rhombus is a parallelogram


- Always
- Sometimes
- Never





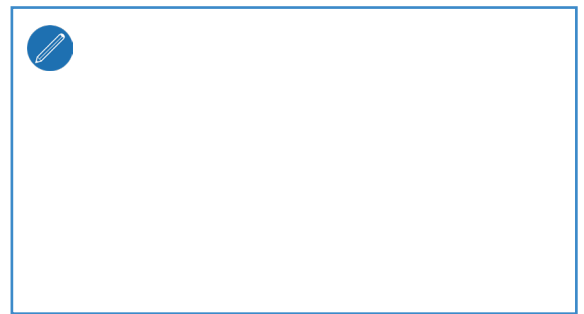
12. A circle is not a polygon

- Always
- Sometimes
- Never



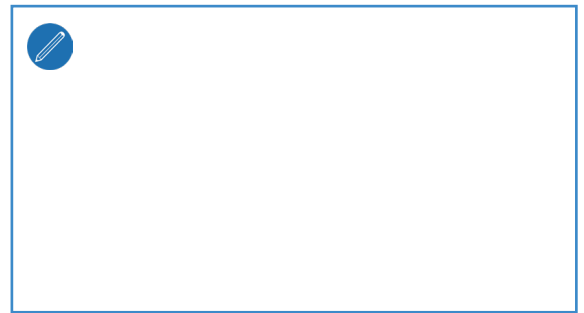
13. An oblong is also an ellipse

- Always
- Sometimes
- Never



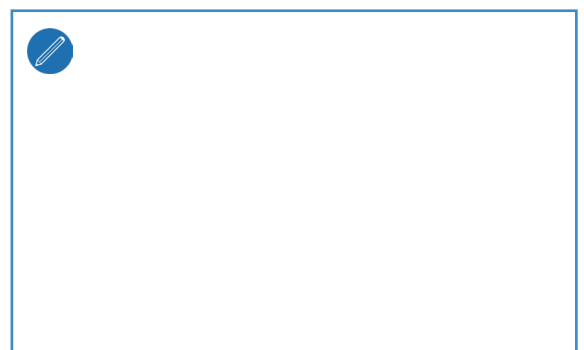
14. Pyramids are prisms

- Always
- Sometimes
- Never



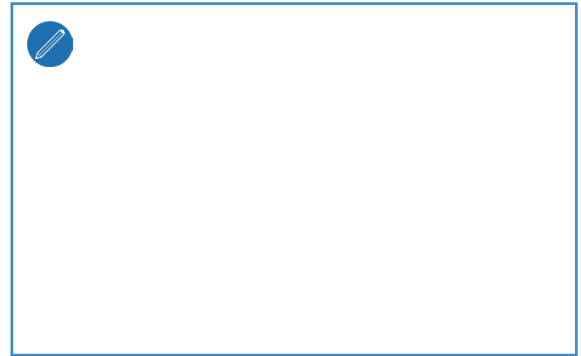
15. If a square and a rectangle have the same perimeter, the square has the smaller area

- Always
- Sometimes
- Never



16. A pyramid can have less than four triangular surfaces

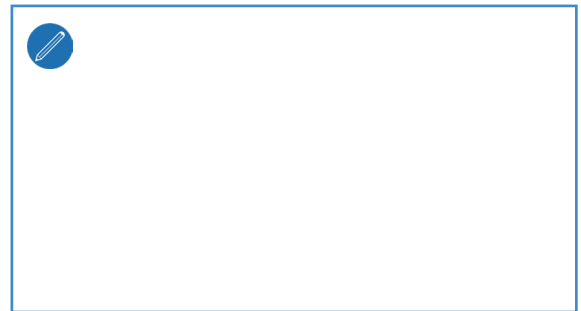
- Always
- Sometimes
- Never



---

17. Half a circle is a semi-circle

- Always
- Sometimes
- Never



---

Were there any statements that you found a challenge?  
Why not look online for any words that you don't recognise.  
Share your ideas with the rest of the class.

# Answers To The 108 Always, Sometimes, Never Maths Questions

Below you'll find our answers to the questions in this resource.

However, please note that whilst these are the answers we have provided, these are the type of questions that will likely spark a fierce debate in your classroom so be prepared to hear a number of varying opinions!

If the children in your class provide you with any answers that have made their classmates (or even yourself) think in greater depth, then why not pose that particular question on our Facebook page and open the debate up to thousands of other teachers!

## Answers To The Always, Sometimes, Never Questions On Squares

- |   |                                       |
|---|---------------------------------------|
| 1. There are 64 squares on a 8 x 8 chessboard           | <b>Always</b>                         |
| 2. A square is also a rhombus                           | <b>Always</b>                         |
| 3. A square is smaller than a rectangle                 | <b>Sometimes</b>                      |
| 4. A square can be split into two triangles             | <b>Always</b>                         |
| 5. A square has 8 angles<br><b>angles only)</b>         | <b>Never (Accounting for internal</b> |
| 6. The diagonals of a square are longer than its sides  | <b>Always</b>                         |
| 7. You can never have an irregular square               | <b>Always</b>                         |
| 8. A square has four congruent edges                    | <b>Always</b>                         |
| 9. The angles of a square add up to 90 degrees          | <b>Never</b>                          |
| 10. A square is half a rectangle                        | <b>Sometimes</b>                      |
| 11. A square is an equilateral tetragon                 | <b>Always</b>                         |
| 12. A square is never concave                           | <b>Always</b>                         |
| 13. A square can also be a kite                         | <b>Never</b>                          |
| 14. The diagonals of a square are the same as its sides | <b>Never</b>                          |
| 15. A square is a rectangle                             | <b>Always</b>                         |
| 16. A rectangle is a square                             | <b>Sometimes</b>                      |

## Answers To The Always, Sometimes, Never Questions On X and :-

- |  |                             |
|--|-----------------------------|
| 1. Multiplying is the same as adding   | <b>Sometimes</b>            |
| 2. Multiplying a number makes it bigger  | <b>Sometimes</b>            |
| 3. Dividing a number makes it smaller  | <b>Sometimes</b>            |
| 4. Dividing is the same as subtracting<br><b>subtraction</b> )                               | <b>Sometimes (Repeated</b>  |
| 5. A number can be multiplied by zero  | <b>Always</b>               |
| 6. It doesn't matter which numbers come first<br>when we divide                              | <b>Sometimes</b>            |
| 7. If a number ends in 0 it divides exactly by 10  | <b>Always</b>               |
| 8. A multiple of 3 is a multiple of 6  | <b>Sometimes</b>            |
| 9. Dividing is harder than multiplying   | <b>Sometimes</b>            |
| 10. To multiply by 10 just add a zero  | <b>Never</b>                |
| 11. There are four different methods of multiplying  | <b>Refer to explanation</b> |
| 12. Multiplying is faster than dividing  | <b>Sometimes</b>            |
| 13. The order in which you multiply two numbers<br>does not change the answer                | <b>Always</b>               |
| 14. If a number ends in 0 it divides exactly by 2  | <b>Always</b>               |
| 15. The seven times table is 50% odd and 50% even  | <b>Always</b>               |
| 16. The products of the five times table are odd   | <b>Never</b>                |
| 17. Multiplying by 8 is the same as multiplying by 4<br>and doubling                         | <b>Always</b>               |
| 18. In the nine times table the sum of the digits<br>makes 9                                 | <b>Sometimes</b>            |
| 19. Multiplying a negative number by a positive<br>number always increases the first number  | <b>Never</b>                |
| 20. Multiplying a positive number by a number<br>between 0 and 1 always increases the number | <b>Never</b>                |
| 21. Multiplying a positive number by a number<br>greater than 1 always increases the number  | <b>Always</b>               |

## Answers To The Always, Sometimes, Never Questions On Triangles

- |  |                                     |
|--|-------------------------------------|
| 1. At least two angles of a triangle are 90 degrees                        | <b>Never</b>                        |
| 2. A right-angled triangle has no lines of symmetry                        | <b>Sometimes</b>                    |
| 3. An equilateral triangle has three sides of similar size                 | <b>Never</b>                        |
| 4. The longest side is opposite the smallest angle                         | <b>Never</b>                        |
| 5. A scalene triangle has three acute angles                               | <b>Sometimes</b>                    |
| 6. All the angles in a regular triangle are congruent                      | <b>Always</b>                       |
| 7. There are three types of right-angled triangle                          | <b>Never</b>                        |
| 8. An obtuse triangle can have two obtuse angles                           | <b>Never</b>                        |
| 9. An isosceles triangle has three angles of $60^\circ$                    | <b>Sometimes</b>                    |
| 10. A triangle can be classified as either obtuse, acute or right-angled   | <b>Always</b>                       |
| 11. All triangles have six angles  | <b>Never (Internal angles only)</b> |
| 12. The longest side of a triangle is called its hypotenuse                | <b>Sometimes</b>                    |
| 13. An equilateral triangle is made up of 9 smaller acute-angled triangles | <b>Sometimes</b>                    |
| 14. A right-angled triangle has one rectangular angle                      | <b>Always</b>                       |
| 15. All the angles of an equilateral triangle are acute                    | <b>Always</b>                       |
| 16. All the angles of an obtuse triangle are obtuse                        | <b>Never</b>                        |
| 17. The angles at the base of a triangle are equal to each other           | <b>Sometimes</b>                    |
| 18. An equilateral triangle has only 2 lines of symmetry                   | <b>Never</b>                        |
| 19. The angles of an isosceles triangle are all different                  | <b>Never</b>                        |
| 20. Three angles of a triangle will equal two right-angles                 | <b>Always</b>                       |
| 21. An isosceles triangle has at least one right-angle                     | <b>Sometimes</b>                    |
| 22. A scalene triangle has three acute angles                              | <b>Sometimes</b>                    |
| 23. A triangle must have at least one acute angle                          | <b>Always</b>                       |
| 24. A triangle can have more than one obtuse angle                         | <b>Never</b>                        |
| 25. All triangles are congruent but not similar                            | <b>Never</b>                        |
| 26. An equilateral triangle is also equiangular                            | <b>Always</b>                       |
| 27. An equilateral triangle is also isosceles                              | <b>Always</b>                       |
| 28. In any triangle, the greater side is opposite the greater angle        | <b>Always</b>                       |

## Answers To The Always, Sometimes, Never Questions On Fractions

- |  |                  |
|--|------------------|
| 1. A fraction always has three parts   | <b>Sometimes</b> |
| 2. A denominator is the dividend of a fraction   | <b>Never</b>     |
| 3. A numerator is always a positive integer  | <b>Sometimes</b> |
| 4. A numerator denotes the number of parts   | <b>Always</b>    |
| 5. A denominator can sometimes be a decimal number   | <b>Never</b>     |
| 6. A numerator can be zero   | <b>Never</b>     |
| 7. A denominator can be a negative number  | <b>Sometimes</b> |
| 8. A proportion is another way of expressing a fraction  | <b>Sometimes</b> |
| 9. In a common fraction the numerator is written above the line                                      | <b>Always</b>    |
| 10. The smaller the denominator the bigger the fraction  | <b>Sometimes</b> |
| 11. The vinculum is the line dividing the numerator and denominator                                  | <b>Always</b>    |
| 12. A mixed number is both a whole number and an improper fraction                                   | <b>Never</b>     |
| 13. An integer can be expressed as a fraction by dividing by 1                                       | <b>Always</b>    |
| 14. The quotient is the denominator part of a mixed fraction   | <b>Never</b>     |
| 15. An improper fraction is a fraction where the numerator is larger than the denominator            | <b>Always</b>    |
| 16. An improper fraction can be converted into a mixed number by division                            | <b>Always</b>    |
| 17. A proper fraction is a fraction where the value of the denominator is smaller than the numerator | <b>Never</b>     |

## Answers To The Always, Sometimes, Never Questions On Square Numbers

- |  |                  |
|--|------------------|
| 1. To square any number multiply by 2  | <b>Sometimes</b> |
| 2. A square number is always 1 more than a triangle number                   | <b>Sometimes</b> |
| 3. If you add three primes together you will make a square number            | <b>Sometimes</b> |
| 4. Square numbers end in 0,1,4,5 or 9  | <b>Sometimes</b> |
| 5. If you subtract a square number from the next square you will get a prime | <b>Sometimes</b> |
| 6. If you multiply two consecutive numbers together you always make a square | <b>Never</b>     |
| 7. All square numbers are composite numbers                                  | <b>Always</b>    |
| 8. A square number is bigger than a triangle number                          | <b>Sometimes</b> |
| 9. A square number is twice as big as the original number                    | <b>Sometimes</b> |



## Answers To The Always, Sometimes, Never Questions On General Topics


- |   |                  |
|---|------------------|
| 1. When you cut a piece off a shape, you reduce its area and perimeter                        | <b>Sometimes</b> |
| 2. When you cut a shape and rearrange the pieces, the area and the perimeter stay the same    | <b>Sometimes</b> |
| 3. All squares are rectangles   | <b>Always</b>    |
| 4. An equilateral triangle is also isosceles  | <b>Always</b>    |
| 5. A triangle can have 2 obtuse angles  | <b>Never</b>     |
| 6. The diagonals of a rectangle cross at right-angles   | <b>Sometimes</b> |
| 7. When you double the side of a square you double the area                                   | <b>Never</b>     |
| 8. A parallelogram has rotational symmetry order of 4   | <b>Sometimes</b> |
| 9. The largest side of a triangle is shorter than the sum of the lengths of the other 2 sides | <b>Sometimes</b> |
| 10. If 2 rectangles both have the same area, they must also have the same perimeter           | <b>Sometimes</b> |
| 11. A rhombus is a parallelogram  | <b>Always</b>    |
| 12. A circle is not a polygon   | <b>Always</b>    |
| 13. An oblong is also an ellipse  | <b>Never</b>     |
| 14. Pyramids are prisms   | <b>Never</b>     |
| 15. If a square and a rectangle have the same perimeter, the square has the smaller area      | <b>Never</b>     |
| 16. A pyramid can have less than four triangular surfaces                                     | <b>Never</b>     |
| 17. Half a circle is a semi-circle  | <b>Always</b>    |


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