Line and rotational symmetry worksheet – Grade 9

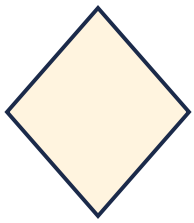
Grade 9 · Mixed level · 20 questions · **Version X6447**

Name: _____ Date: _____ Score: ___ / 20

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1. How many lines of symmetry does this rhombus have?



Answer: _____

2. What is the order of rotational symmetry of the letter Z?



Answer: _____

3. Find the order of rotational symmetry of the letter J.

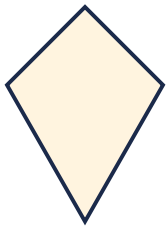


Answer: _____

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4. How many lines of symmetry does this kite have?



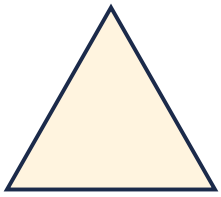
Answer: _____

5. Work out the order of rotational symmetry of the letter B.



Answer: _____

6. How many lines of symmetry does this equilateral triangle have?



Answer: _____

7. How many lines of symmetry does this rectangle have?



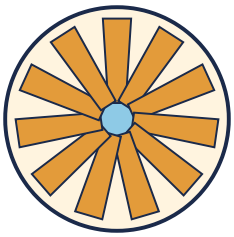
Answer: _____

8. Find the axis of symmetry of $y = (x - 2)^2 + 3$. Give the value of x.

Answer: _____

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9. This wheel rim has 11 identical spokes. What is the smallest angle it can turn and look the same, in degrees? Give your answer to one decimal place.



Answer: _____

10. A regular polygon matches itself after a turn of 22.5°. How many sides does it have?

Answer: _____

11. Which shape has rotational symmetry of order 2 but no lines of symmetry?

A. Parallelogram **B.** Square **C.** Kite **D.** Isosceles triangle

12. A parabola has zeros at x = 3 and x = 9. What is its axis of symmetry? Give the value of x.

Answer: _____

13. What is the axis of symmetry of $y = (x - 4)^2 + 1$? Give the value of x.

Answer: _____

14. Work out the axis of symmetry of $y = (x - 1)^2 + 1$. Give the value of x.

Answer: _____

15. Do all shapes with two lines of symmetry at right angles also have rotational symmetry of order 2?

A. Yes **B.** No

16. A snowflake has 6 lines of symmetry and order 6. How many degrees apart are neighbouring lines of symmetry?

Answer: _____ °

17. A company's logo has rotational symmetry of order 4. How many degrees is the smallest turn?

Answer: _____ °

18. Which of these has more lines of symmetry than a square?

A. A regular hexagon **B.** A rectangle **C.** A rhombus **D.** An equilateral triangle

19. A fan with 3 equal blades spins through 9 matching positions. How many full turns is that?

Answer: _____

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20. A parabola has its axis at x = 2. The point (3, 6) is on it. What is the x-coordinate of the matching point at the same height?

    Answer: _____

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Answer key · Version X6447

Line and rotational symmetry worksheet – Grade 9 · Grade 9 · to reprint this sheet or check the answers, enter X6447 on the skill page.

1. **2**
2. **2**
3. **1**
4. **1**
5. **1**
6. **3**
7. **2**
8. **2**
9. **32.7**
10. **16**
11. **A (Parallelogram)**
12. **6**
13. **4**
14. **1**
15. **A (Yes)**
16. **30**
17. **90**
18. **A (A regular hexagon)**
19. **3**
20. **1**

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