



LINES OF SYMMETRY · GRADE 4 · 4.G.A.3

Name It Twice, Then Fold It

Name _____ Date _____ Correct _____ / 30

1 Both names, then the folds - the two groupings from 4.G.A.2, and neither one lets you skip the other

Ring both names for every picture, then count the lines of symmetry it holds. Some are turned, so read the corner and not the way it sits.

1. (a)



corner ☐ right ☐ acute

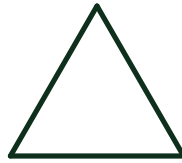
☐ obtuse

sides ☐ 3 alike ☐ 2 alike

☐ none alike

lines it holds _____

2. (b)



corner ☐ right ☐ acute

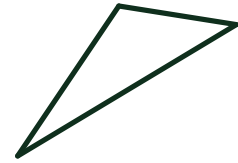
☐ obtuse

sides ☐ 3 alike ☐ 2 alike

☐ none alike

lines it holds _____

3. (c)



corner ☐ right ☐ acute

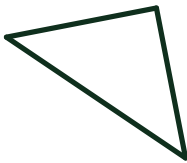
☐ obtuse

sides ☐ 3 alike ☐ 2 alike

☐ none alike

lines it holds _____

4. (d)



corner ☐ right ☐ acute

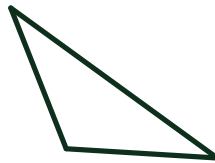
☐ obtuse

sides ☐ 3 alike ☐ 2 alike

☐ none alike

lines it holds _____

5. (e)



corner ☐ right ☐ acute

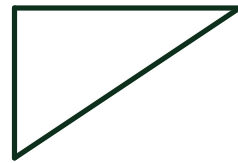
☐ obtuse

sides ☐ 3 alike ☐ 2 alike

☐ none alike

lines it holds _____

6. (f)



corner ☐ right ☐ acute

☐ obtuse

sides ☐ 3 alike ☐ 2 alike

☐ none alike

lines it holds _____

Roots of Reason

Name It Twice, Then Fold It · 4.G.A.3

Name _____ Date _____

2 Which name settled it - then run the same question backwards

7. Look back at your six answers. One of the two names told you the count every time and the other never did on its own. Name each of them, and give two pictures with the same corner name and different counts.

Now the count comes first and the group is what you have to find. Ring one answer for each.

8. A triangle holds exactly 3 lines of symmetry.

so its sides are ☐ 3 alike

☐ 2 alike

☐ none alike

☐ cannot tell

9. A triangle holds exactly 1 line of symmetry.

so its sides are ☐ 3 alike

☐ 2 alike

☐ none alike

☐ cannot tell

10. A triangle holds no line of symmetry at all.

so its sides are ☐ 3 alike

☐ 2 alike

☐ none alike

☐ cannot tell

11. A four sided figure holds exactly 2 lines of symmetry. Does that count settle what kind of figure it is?

the count ☐ settles it ☐ does not settle it

Name two four sided figures that are not the same kind as each other and that each hold exactly 2. Say how you know each one holds 2.

Roots of Reason

Name It Twice, Then Fold It · 4.G.A.3

Name _____ Date _____

3 Build it, then turn it - one square corner in both boxes, and two different counts

12. Draw one triangle in each box. Both must have a square corner. Then rule every line of symmetry your triangle holds and write the count.

with exactly two sides alike



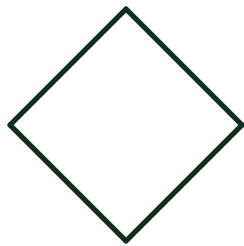
lines it holds _____

with no two sides alike



lines it holds _____

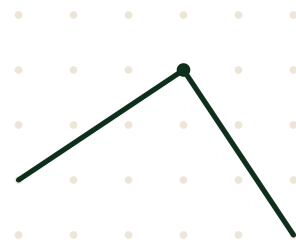
13. Picture (n) has been turned. Say what kind of figure it is, then rule and count every line of symmetry.



it is ☐ a square ☐ not a square

lines it holds _____

14. Neither arm of (p) follows a line of dots. Count the steps along each arm, then say how they meet.



the two arms meet ☐ square ☐ at a slant

15. A classmate ruled 2 lines on picture (n) and stopped. Say which directions were never tried, and what they would have found.



LINES OF SYMMETRY · GRADE 4 · 4.G.A.3

Name It Twice, Then Fold It

Both names, then the folds

1. (a) right, 2 alike, **1** 2. (b) acute, 3 alike, **3** 3. (c) obtuse, none alike, **0**
4. (d) right, 2 alike, **1** 5. (e) obtuse, 2 alike, **1** 6. (f) right, none alike, **0**

Pictures (a) and (d) are one triangle at two attitudes, so all three answers must agree. In (a) the line runs straight up the page. In (d) it leans, and a reader who tries only across and down reports 0 and also calls the square corner acute.

Which name settled it

7. The side name settled it every time: 3 alike holds 3, 2 alike holds 1, none alike holds 0. The corner name never did on its own. Accept (a) and (f), both right and holding 1 and 0, or (c) and (e), both obtuse and holding 0 and 1.

8. **3 alike** 9. **2 alike** 10. **none alike**

11. **No.** A rectangle that is not a square holds 2, one across and one up. A rhombus that is not a square holds 2, both corner to corner. The two are not the same kind of figure and the count cannot tell them apart. A square holds 4, so it is not one of the two.

Build it, then turn it

12. Left box **1**, right box **0**. Both triangles carry a square corner, so the corner name settled neither count and the side name settled both.

13. **A square**, holding **4** lines. Two run square to the page through facing corners. Two lean, through the middles of facing sides.

14. **Square**. One arm steps 3 across and 2 up, the other 2 across and 3 down. Neither follows a line of dots and they still meet square, which is the crossing a line of symmetry has to make with the join between two matching corners.

15. The two leaning directions, through the middles of facing sides. They hold the other two lines, which makes 4.

Mark items 1 to 6 as three answers each. A reader who ringed one name per picture and left the other blank has one belief, not six mistakes: ask them for the missing name on (a) alone. A reader who wrote 0 for (d) and 2 for (n) has a different one, and both are answered by turning the page rather than by counting again.