



LINES OF SYMMETRY • GRADE 4 • 4.G.A.3

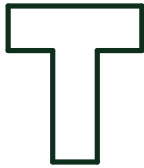
When the Dots Are Gone

Name _____ Date _____ Correct _____ / 25

1 Rule every line and count - no dots this time, and nothing says how many to look for

Rule every line of symmetry each picture holds, then write the count. Turn the page around if it helps you see a slanted one.

1. (a)



lines it holds _____

2. (b)



lines it holds _____

3. (c)



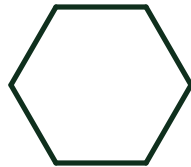
lines it holds _____

4. (d)



lines it holds _____

5. (e)



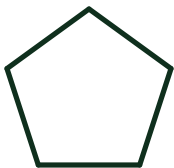
lines it holds _____

6. (f)



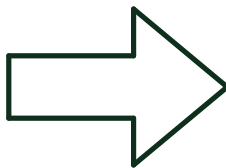
lines it holds _____

7. (g)



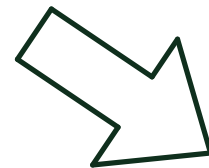
lines it holds _____

8. (h)



lines it holds _____

9. (i)



lines it holds _____

10. Pictures (h) and (i) are one arrow, turned. Say why one is far easier to rule.

Roots of Reason

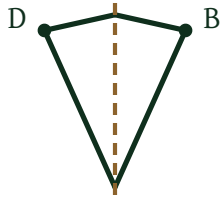
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Name _____ Date _____

2 Measure both halves of the test - same distance is only the first half

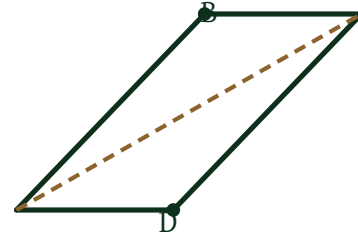
Measure from the dashed line to **B** and to **D**. Then lay a ruler along the join from **B** to **D** and look at the corner it makes with the dashed line.

11. (j)



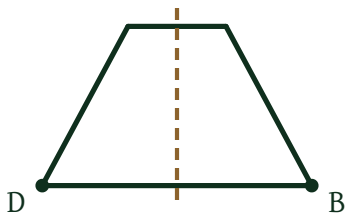
distances ☐ same ☐ not the same
 join crosses ☐ square ☐ at a slant
 so it ☐ folds ☐ does not

12. (k)



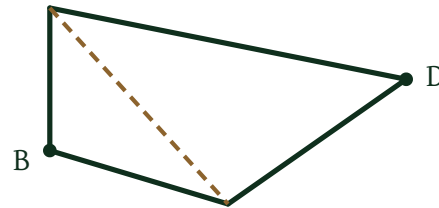
distances ☐ same ☐ not the same
 join crosses ☐ square ☐ at a slant
 so it ☐ folds ☐ does not

13. (l)



distances ☐ same ☐ not the same
 join crosses ☐ square ☐ at a slant
 so it ☐ folds ☐ does not

14. (m)



distances ☐ same ☐ not the same
 join crosses ☐ square ☐ at a slant
 so it ☐ folds ☐ does not

15. In picture (k) the two distances came out the same and the line cuts the figure into two equal parts, and it still does not fold. Name the one measurement that settled it.

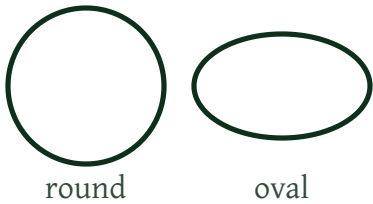
Roots of Reason

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Name _____ Date _____

3 The round piece and the missing half - one of these has no count that fits

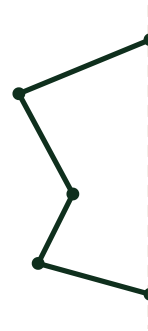
16. A round piece folds onto itself along every line through its middle. A classmate says that is because it has no straight sides. The oval beside it has no straight sides either.



Lines the oval holds _____

So the classmate is wrong. Say what really settles it for the round piece.

17. Draw the missing half so the whole picture folds onto itself along the dashed line. There is nothing to count along, so measure each corner across.



corners on the whole picture _____

corners you had to add _____

times as wide as the half _____

18. A picture is printed on a page you may not cut or fold. Write the test you would use to be certain it holds a line of symmetry, and say what you would measure to run it.



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When the Dots Are Gone

Rule every line and count

1. (a) 1 upright 2. (b) 2 3. (c) 0 4. (d) 1 across 5. (e) 6 6. (f) 0 7. (g) 5 8. (h) 1 across 9. (i) 1 slanted

Picture (c) turns onto itself halfway round and never folds, which is the one most often called symmetric. In (e) three lines run corner to corner and three side to side. In (g) every line runs from a corner to the middle of the facing side.

10. One arrow, so both hold one line. In (h) it runs straight across the page and the directions tried first find it. In (i) the same line leans, so both fail and the picture reads as holding none.

Measure both halves of the test

Distances are read in the reader's own units, so mark the comparison rather than the number.

11. (j) same, square, *folds* 12. (k) same, at a slant, *does not* 13. (l) same, square, *folds* 14. (m) not the same, *does not*

15. The corner the join from B to D makes with the dashed line. In (k) it is not square, so B does not land on D when the picture is folded. Equal distance says the corners are as far out as each other and nothing about the direction they lie in. A fold settles that direction without anyone naming it, which is why the belief survives folding.

The round piece and the missing half

16. The oval holds 2, one along its length and one across it, so having no straight sides is not what does it. What settles the round piece is that every point on its edge stands the same distance from one middle point, so every line through that point leaves the same edge either side.

17. Whole picture: 8 corners, 3 added, and 2 times as wide as the half given. Each added corner sits as far out from the line as its match, on the square across from it.

18. Accept any test measuring two things: that a pair of matching points sit the same distance from the line, and that the join between them crosses it square. A reader naming only distance has written half the test.

Mark 1 to 9 as one answer, not nine. A reader who wrote 1, 2, 0, 1, 2, 0, 1, 1, 0 stopped at the directions running square to the page, which is one belief. The lines missed are three in (e), four in (g), and the only one in (i).