



LINES OF SYMMETRY · GRADE 4 · 4.G.A.3

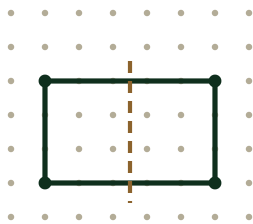
Every Way It Folds

Name _____ Date _____ Correct _____ / 25

1 Test the line that is drawn - every one of these cuts its figure into two equal parts

Trace the figure, fold along the dashed line, and count the corners that land. Then ring it.

1. (a)

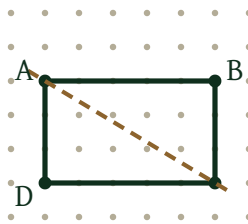


corners that land _____

☐ folds

☐ does not

2. (b)

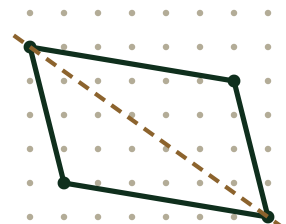


corners that land _____

☐ folds

☐ does not

3. (c)

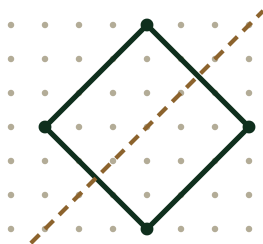


corners that land _____

☐ folds

☐ does not

4. (d)

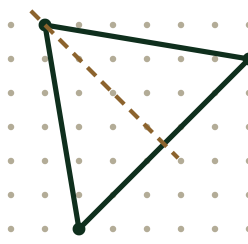


corners that land _____

☐ folds

☐ does not

5. (e)

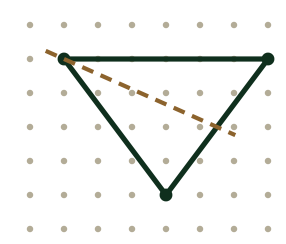


corners that land _____

☐ folds

☐ does not

6. (f)



corners that land _____

☐ folds

☐ does not

7. In figure (b) the corners **B** and **D** sit exactly the same distance from the dashed line, and the line cuts the join between them in half. It still does not fold. Say what is missing.

Roots of Reason

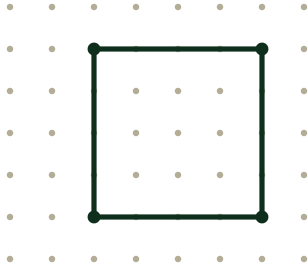
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Name _____ Date _____

2 Find every one - *nothing here tells you how many to look for*

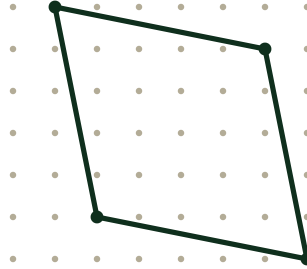
Rule every line of symmetry each figure holds, then write the count. Try across, down, and both corner to corner directions on every one before you write a number.

8. (h)



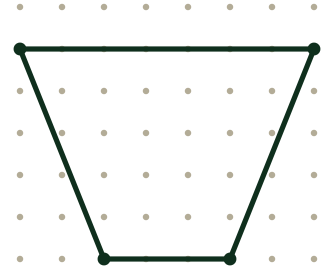
lines it holds _____

9. (i)



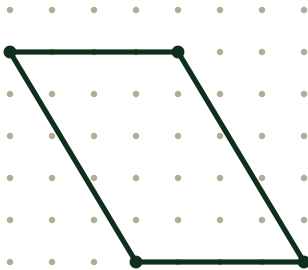
lines it holds _____

10. (j)



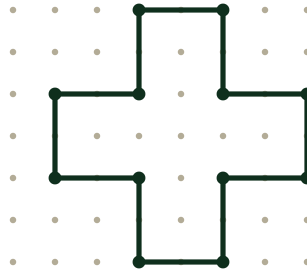
lines it holds _____

11. (k)



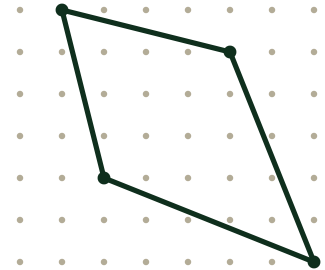
lines it holds _____

12. (l)



lines it holds _____

13. (m)



lines it holds _____

14. A classmate folded figure (h) top to bottom, then side to side, wrote 2, and stopped. What did they miss, and what would have told them to keep looking?

Roots of Reason

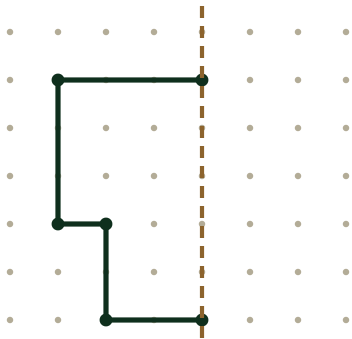
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Name _____ Date _____

3 Build the other half - the line is given and the figure is missing

Draw the missing half so the whole figure folds onto itself along the dashed line. Count steps out from the line, one corner at a time, then answer from the figure you drew.

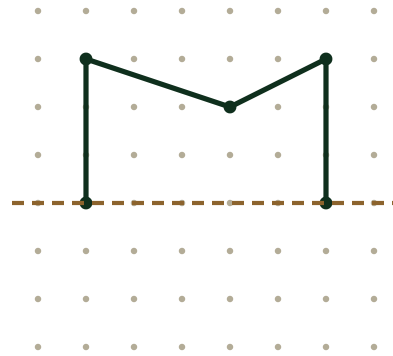
15. Complete figure (n) across the dashed line.
Here every side runs along the dots.



corners on the whole figure _____

steps across at its widest _____

16. Complete figure (p) across the dashed line.
Here two sides slope across the dots.



corners on the whole figure _____

steps across at its widest _____

17. Draw a figure of your own that holds **exactly two** lines of symmetry, then rule both of them.





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Every Way It Folds

Test the line that is drawn

Written as corners that land, then the ruling. 1. *4, folds* 2. *2, does not* 3. *2, does not* 4. *4, folds* 5. *3, folds* 6. *1, does not*

In 2, 3 and 6 the only corners that land are the ones already sitting on the line. All six lines cut their figure into two equal parts, so equal parts settles nothing.

7. The join between B and D has to cross the dashed line at a square corner, and it crosses at a slant. Distance from the line is half the test. Direction is the other half, and a fold supplies it without ever being mentioned.

Find every one

8. **(h)** *4* across, down, and both corner to corner 9. **(i)** *2*, both slanted 10. **(j)** *1*

11. **(k)** *0*. Its two corner to corner lines each cut it into equal parts and neither folds. 12. **(l)** *4* 13. **(m)** *1*, slanted

14. They missed the two corner to corner folds, so 4 was the count. Figure (i) is what tells them: it holds two lines and neither runs across or down, so trying only those two directions returns 0 on a figure that is plainly symmetric.

Build the other half

15. Four corners are added, each the same number of steps to the right of the line as its match is to the left. Whole figure: *8* corners, *6* steps across.

16. Three corners are added. The two sloping sides cannot be placed by counting along one direction alone: each needs its steps across and its steps down together. Whole figure: *6* corners, *5* steps across.

17. Accept any figure holding exactly two lines, with both ruled. A rectangle that is not a square and a rhombus that is not a square are the two that come up most. Refuse a square, which holds four, and refuse a figure with two lines ruled and a third the reader did not test for.

Mark page 2 as one answer, not six. A reader who wrote 2, 0, 1, 0, 2, 0 tested across and down on every figure and never tried a corner to corner direction, which is one belief and not four errors. That reader still writes the right number on 11, because a search that finds nothing returns 0 whatever it looked at.