



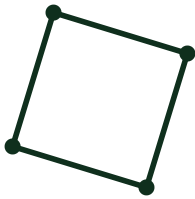
SORTING SHAPES · GRADE 4 · 4.G.A.2

Sorting Shapes by Their Lines

Name _____ Date _____ Correct _____ / 24

1 Mark what you measure - every shape is turned, so nothing lines up with the edge of the page

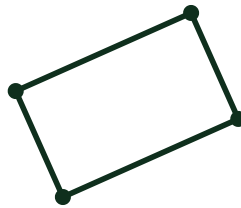
For each shape, count the pairs of sides that run the same way and never meet, then count the corners that are square. Use a folded paper corner. Do not guess from how it looks.



1. (a)

parallel pairs _____

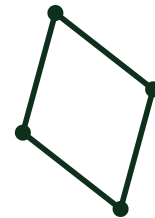
square corners _____



2. (b)

parallel pairs _____

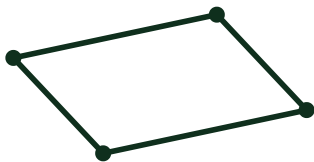
square corners _____



3. (c)

parallel pairs _____

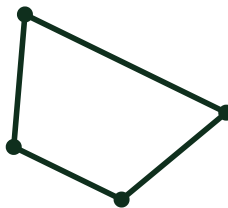
square corners _____



4. (d)

parallel pairs _____

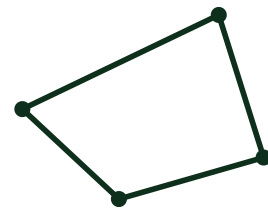
square corners _____



5. (e)

parallel pairs _____

square corners _____



6. (f)

parallel pairs _____

square corners _____

7. Two of the six have two pairs of parallel sides and no square corner at all. Which two letters?

_____ and _____

Roots of Reason

Sorting Shapes by Their Lines · 4.G.A.2

Name _____ Date _____

2 Every name it answers to - a shape can carry more than one

Use the marks you made on page 1, not the pictures. A shape belongs to a name whenever it meets that name's rule, even if a closer name also fits.

quadrilateral four straight
sides

parallelogram two
pairs parallel

rectangle four
square corners

rhombus four sides
equal

square four square corners and four sides equal

shape	quadrilateral	parallelogram	rectangle	rhombus	square
8. (a)					
9. (b)					
10. (c)					
11. (d)					
12. (e)					
13. (f)					

14. Every square is a rectangle.

☐ true

☐ false

15. Every rectangle is a square.

☐ true

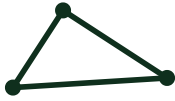
☐ false

16. One of the two statements above is true and the other is false. Use a shape from page 1 to show why the false one is false.

Roots of Reason

Sorting Shapes by Their Lines · 4.G.A.2

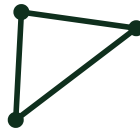
Name _____ Date _____

3 Which ones are right triangles - test every corner, not the one that looks likeliest

17. (g) right triangle?

yes

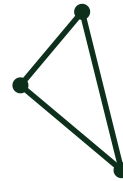
no



18. (h) right triangle?

yes

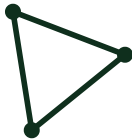
no



19. (i) right triangle?

yes

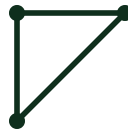
no



20. (j) right triangle?

yes

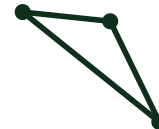
no



21. (k) right triangle?

yes

no



22. (l) right triangle?

yes

no

23. One of the six has a corner that is close to square but is not. Which letter, and how did you settle it?

24. A classmate says (k) is the only right triangle because it is the only one sitting flat. Say what is wrong with that.



SORTING SHAPES · GRADE 4 · 4.G.A.2

Sorting Shapes by Their Lines

Mark what you measure

Written as parallel pairs, then square corners. 1. 2, 4 2. 2, 4 3. 2, 0 4. 2, 0 5. 1, 0 6. 0, 0

7. *c and d*. Two pairs of parallel sides do not bring square corners with them, which is the whole of what separates a parallelogram from a rectangle.

Every name it answers to

8. (a) *all five names* 9. (b) *quadrilateral, parallelogram, rectangle*

10. (c) *quadrilateral, parallelogram, rhombus* 11. (d) *quadrilateral, parallelogram*

12. (e) *quadrilateral* 13. (f) *quadrilateral*. Shape a is the only one that fills every column.

14. *true* 15. *false* 16. Shape b has four square corners and its sides are not all equal, so it is a rectangle and not a square.

Which ones are right triangles

17. (g) *yes*, 90, 36.6, 53.4 18. (h) *no*, 85, 45.3, 49.7 19. (i) *yes*, 90, 54, 36

20. (j) *no*, 60, 60, 60 21. (k) *yes*, 90, 45, 45 22. (l) *no*, 122, 25.2, 32.8

23. *h*, and the folded corner settles it: laid into that corner it leaves a sliver of daylight, so the corner is under square.

24. Three of the six are right, and (g) and (i) are turned. Sitting flat is a fact about the page, not about the corner.

Mark page 2 by rows, not by names. A reader who has ticked exactly one box per shape has answered every row wrongly in the same way, and it will read as five near misses rather than as one belief. Shape e carries one pair of parallel sides and no name beyond quadrilateral is asked for it, because the two definitions of trapezoid in circulation disagree about shapes c and d.