



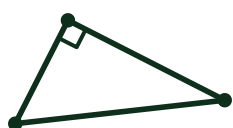
Roots of Reason

Classifying Figures Check

Name _____ Date _____ Correct _____ / 23

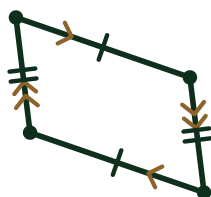
1 Write the closest name. *Each figure is turned. Turning a figure does not change its name.*

same length
 same way, never meet
 right angle



1. (a)

closest _____



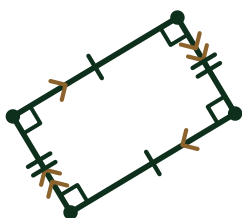
2. (b)

closest _____



3. (c)

closest _____



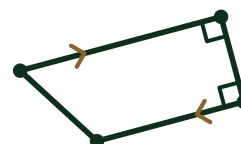
4. (d)

closest _____



5. (e)

closest _____



6. (f)

closest _____

7. every figure with a right angle

8. every figure with no pair running the same way

9. every figure that is a right triangle

10. the figure with four sides alike and no right angle

Roots of Reason

Name _____ Date _____

quadrilateral four straight sides

parallelogram two pairs run the same way

rhombus four sides the same length

right triangle three sides, one right angle

trapezoid exactly one pair runs the same way

rectangle four right angles

square four right angles and four sides alike

obtuse triangle three sides, one angle greater than a right angle

2 Agree or disagree. *The letters name the figures on page 1.*

11. Figure (d) is a rectangle, so it is not a parallelogram.

☐ true

☐ false

12. Figure (a) has a right angle, so it is not a triangle.

☐ true

☐ false

13. A triangle can have a right angle and still have no two sides the same length.

☐ true

☐ false

14. Figure (f) has a pair of sides running the same way, so it cannot have a right angle.

☐ true

☐ false

15. Figures (b) and (e) both have two pairs running the same way, so they have the same closest name.

☐ true

☐ false

16. A figure with four right angles always has two pairs of sides running the same way.

☐ true

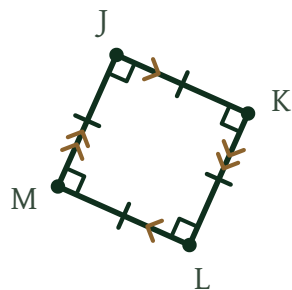
☐ false

17. A classmate sorts the six figures on page 1 by whether each one has a right angle, and says that sorting decides the name of each figure. Say what is wrong, and name two figures that show it.

Roots of Reason

Name _____ Date _____

3 Put JKLM in every group it belongs to



18. a pair of sides that run the same way _____

19. the closest name _____

20. one wider name that also fits _____

21. One of these is true of JKLM. Mark it.

a square, so not a rectangle

a square, a rectangle and a rhombus

a rectangle only when turned to line up with the edges of the page

4 Draw one figure that has both names. *Count the spaces between the dots, not the dots.*

22. Draw a figure with a right angle and exactly one pair of sides running the same way.



closest name _____

23. Draw a figure with three sides, one right angle, and two sides the same length.



closest name _____



Roots of Reason

Classifying Figures Check

Write the closest name

1. *right triangle* 2. *parallelogram* 3. *obtuse triangle* 4. *rectangle* 5. *rhombus* 6. *trapezoid*

Six figures, six different names, none of them lined up with the edges of the page. Take a wider name as correct only where the student also gave the closest one.

Report the sets

7. *a, d, f* 8. *a, c* 9. *a* 10. *e*

Item 8 is the two triangles: three sides cannot hold a pair running the same way. Item 10 turns on both marks at once, since (d) also has right angles and (b) has two pairs of sides alike rather than four.

Agree or disagree

11. *false* 12. *false* 13. *true* 14. *false* 15. *false* 16. *true*

11. A rectangle has two pairs running the same way, so it is a parallelogram as well. 12. A right angle and three sides sit together happily, and (a) is the proof. 13. (a) has sides of three different lengths. 14. (f) has both, one pair and two right angles. 15. (b) and (e) both have two pairs, and (e) has four sides alike while (b) does not. 16. Four right angles force both pairs to run the same way.

Roots of Reason

Say what is wrong

17. Sorting on one attribute reports that attribute and nothing else. (a) and (d) both have a right angle, and their names are different. (b) and (e) have no right angle, and their names are also different. The name needs the sides and the corners together.

Put JKLM in every group it belongs to

18. *JK and LM*, or KL and MJ 19. *square* 20. *rectangle*, or rhombus, parallelogram or quadrilateral
21. *a square, a rectangle and a rhombus*

Draw one figure that has both names

22. Any four sided figure with one pair running the same way and at least one right angle. Figure (f) on page 1 is one, and so is any four sided figure with two dots along one side, a right angle turned up from it, and the opposite side shorter and running the same way. Closest name *trapezoid*.

23. A triangle with a right angle and the two sides that meet at it drawn the same length. Closest name *right triangle*, and isosceles right triangle is also correct. Turn down any drawing where the equal sides are the two that do not meet at the right angle, because the longest side of a right triangle cannot be matched by another.

Mark 11, 15, 19 and 20 together. A student who turns down every wider name thinks a figure can have only one name, and no single item shows that as clearly as the four of them side by side. Mark 12, 14 and 21 together for the other habit, sorting once and calling the classification settled.