

Grade 3 · Quadrilaterals and Partitioning Shapes · Test Answer Key

Common Core 3.G.A.1, 3.G.A.2 · mathovore.fr

Use this answer key to score the test out of 20 points. Each solution shows the reasoning, and the scoring line says how the points are earned. Give credit for any correct drawing, since many different quadrilaterals and cuts work.

Grade 3 Common Core: 3.G.A.1 · 3.G.A.2

Question 1: Find the quadrilaterals (2 points)

- a. A, C and E each have 4 sides. **A, C, E**
- b. B is a triangle with **3 sides**. D is a pentagon with **5 sides**.

Scoring: 1 point for A, C and E with no extra letters. 1 point for 3 and 5.

Question 2: Name the shapes (3 points)

- a. P has 4 equal sides and 4 right angles: **square**.
- b. Q has 4 right angles but the sides are not all equal: **rectangle**.
- c. R has 4 equal sides and no right angles: **rhombus**.

Scoring: 1 point for each correct name. Accept "rectangle" or "rhombus" for P only if the student also says square.

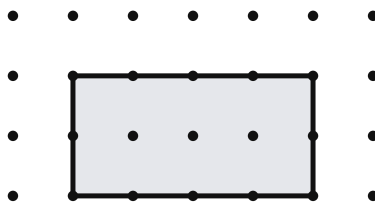
Question 3: True or false (2 points)

- a. **True**. A square has 4 equal sides, and that is the attribute of a rhombus.
- b. **False**. A rectangle can have sides of different lengths, such as 6 in and 3 in.

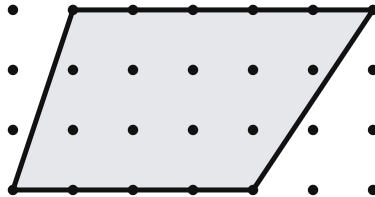
Scoring: For each part, half a point for the true or false answer and half a point for a correct reason; round the part to 1 if both are right, 0 otherwise.

Question 4: Draw quadrilaterals (3 points)

- a. Any rectangle with unequal sides works, for example 4 spaces wide and 2 spaces tall.
- b. Any four-sided shape with unequal sides and no right angles works.
- c. The sample shape has sides of 4, about 3.6, 5 and about 3.2 spaces, so the sides are not all equal. It has no right angles. It fits none of the three groups.



Sample answer for part (a).



Sample answer for part (b).

Scoring: (a) 1 point for 4 straight sides, 4 right angles and unequal neighbors. (b) 1 point for 4 straight sides with unequal lengths and no right angles. (c) 1 point for a reason that names the attributes.

Question 5: Equal parts (2 points)

- 3 equal parts: each part is $\frac{1}{3}$ of the rectangle.
- $18 \div 3 = 6$. Each part is 2 by 3. **6 square units.**

Scoring: 1 point for $\frac{1}{3}$. 1 point for 6 square units.

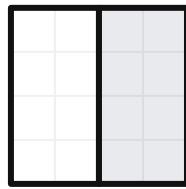
Question 6: Halves or not (3 points)

- Square P: both parts are 2 by 4, so each has 8 square units. **Square P**
- The narrow part is 1 by 4 and the wide part is 3 by 4. **4 square units and 12 square units**
- Halves must have equal areas. 4 is not equal to 12, so these parts are **not equal**.

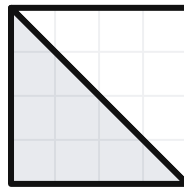
Scoring: 1 point for P. 1 point for both areas, 4 and 12. 1 point for a reason about unequal areas.

Question 7: Two ways to cut (2 points)

Two possible ways are shown. In each, both parts have an area of 8 square units.



Way 1



Way 2

A vertical cut and a diagonal cut.

Accept the horizontal cut too.

Scoring: 1 point for each valid way. The two ways must be different. A cut that makes parts of unequal area earns 0 points.

Question 8: Ethan's garden bed (3 points)

- a. $6 \times 4 = 24$. **24 square feet**
- b. $24 \div 8 = 3$. **3 square feet** (each section is 3 ft by 1 ft)
- c. 8 equal sections: $\frac{1}{8}$

Scoring: 1 point for each part. Include the unit square feet in parts (a) and (b).

Total
20 points