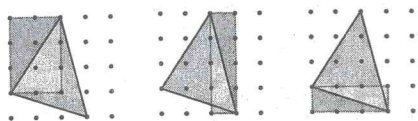


Chapter 8 Lesson 1 Area of Polygons

Answers

- A. The area is 5 whole squares, 2 half squares or 1 whole square, and 2 halves of a 3-square rectangle or 3 squares, so the total is 9 square units.
- B. Check student models and records to be sure they are the same shape as the tree logo and occupy the same area.
- C. For example, there are 6 whole squares and 8 half squares so I estimate about 10 square units.
- D. There are 6 whole squares and 8 half squares so the total is $6 + 4$ or 10 square units.
- E. The tree logo needs 1 square unit more fabric paint.
1. For example, I counted all of the whole squares and then added half of the number of partial squares.
2. No, Juanita's method won't work. For example, I can make three rectangles around the sides of the triangle, but the green areas inside two of them don't fill half of these rectangles (see diagrams at right). Also, the same two rectangles overlap in one square, so I end up having to count the same area more than once.
3. a) For example, I see 8 whole squares and 6 parts so I estimate 10 square units.

- b) For example, I count 8 whole squares, 2 half squares and two right-angled triangles that each have an area of 1 square, so the total is 11 square units.



Practising

- 4. a) For example, I see 5 whole squares and 8 half squares so I estimated 9 square units. I also measured 9.
- b) For example, I see 10 whole squares and 4 part squares so I estimated 11 square units. I measured 12.
- c) For example, I see 6 whole squares and 8 parts so I estimated 10 square units. I counted 6 whole squares, 2 half squares, and 3 right-angled triangles each having an area of 1 square, so the area measures $6 + 1 + 3 = 10$ square units.
5. a) & b) Students should record their designs accurately, and their estimates should be reasonable.
- c) Student measurements should be accurate, while their descriptions should show that they understand how to find the area of polygons using rectangles and right-angled triangles for partial areas.