Name_____ Date_____ Period_____

LESSON 5-3 · SESSION 1 · PRACTICE · FORM B

Trapezoids by Decomposing

Learning target – I can find the area of a trapezoid by decomposing it into a rectangle and triangles. · 6.G.A.1

REMEMBER

- A **trapezoid** has one pair of parallel sides, called the **bases**. The **height** meets the bases at a square corner.
- **Decompose**: cut it into a rectangle and one or two triangles. Find each area, then **add**.
- The triangle bases together equal the **long base – short base**. Two matching triangles split it in half.

WORKED EXAMPLE

Bases 6 cm and 14 cm, height 5 cm, two matching triangles.

Step 1 Rectangle: 6 × 5 = 30 cm².

Step 2 Each triangle base: (14 − 6) ÷ 2 = 4 cm.

Step 3 Triangles: 2 × (½ × 4 × 5) = 20 cm².

Answer **30 + 20 = 50 cm²**

WORDS **trapezoid** *(trapecio)* · **decompose** *(descomponer)* · **height** *(altura)*

PRACTICE

show your work · label units

1. Each trapezoid is cut into a rectangle and two matching triangles. Find the base of one triangle.

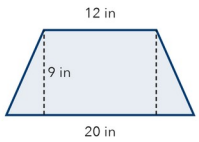
a. bases 12 in and 20 in _____

b. bases 6 m and 16 m _____

c. bases 9 cm and 21 cm _____

d. bases 15 ft and 23 ft _____

2. **Craft Tabletop.** A craft tabletop is an isosceles trapezoid. It is cut into a rectangle and two matching triangles.

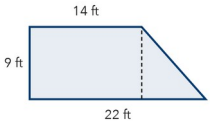


a. Area of the rectangle _____ in²

b. Area of both triangles _____ in²

c. Area of the tabletop _____ in²

3. **Right-Angle Deck.** A deck is a trapezoid with one square corner. Decompose it into a rectangle and a triangle. Find its area.



Hint *One triangle only. Its base is the long side minus the short side.*

Show your work.

Answer_____ ft²

4. Bus Shelter Roof. A roof panel is an isosceles trapezoid with bases 6 m and 16 m and a height of 8 m. Find its area.

Hint *Split the leftover 16 − 6 into two equal triangle bases.*

Show your work.

Answer_____ m²

5. Corner Garden. A garden is a trapezoid with one square corner. Its parallel sides are 9 yd and 15 yd, and the height is 14 yd. Find its area.

Show your work.

Answer_____ yd²

6. Tray and Mat. A lunch tray is an isosceles trapezoid with bases 14 in and 24 in and a height of 12 in. A placemat is a rectangle 19 in by 12 in. Find each area. Do they cover the same space?

Hint *Find the tray by decomposing, then the mat as length × width.*

Show your work.

Same or not_____

7. Stage Apron. A stage apron is an isosceles trapezoid with bases 15 m and 25 m and a height of 8 m. Decompose it and find its total area.

Hint *Slice off the two end triangles. A rectangle is left in the middle.*

Show your work.

Answer_____ m²

8. Deck Plan. A deck is a trapezoid with bases 12 ft and 20 ft and a height of 5 ft. Decking costs $9 per square foot.

a. Area of each piece _____

b. Total area _____ ft²

c. Total cost _____

Show your work.

FIND THE ERROR

explain the mistake, then fix it

9. Amina's Work. A trapezoid has bases 13 m and 23 m and a height of 8 m. Amina cut it into a rectangle and two triangles, then wrote: "Area = 13 × 8 = 104 m²." Explain the mistake and find the correct area.

_____

_____

_____

TEST PRACTICE

choose the best answer

10. Every piece of a decomposed trapezoid has the same –

A base **B** area **C** height **D** slanted side

11. A rectangle 8 cm by 5 cm plus a triangle with area 12 cm² gives a total area of –

A 25 cm² **B** 40 cm² **C** 52 cm² **D** 64 cm²

SELF-CHECK CODE *find your answer · copy its letter into that problem's box · spell a math word*

228	168	162	144	128	720	160	120	88	200
I	T	E	S	X	N	O	Z	C	Q

#2c	#3	#4	#5	#6	#7	#8c

CHECK YOURSELF ☐ I can do this on my own ☐ I need a little help ☐ I have a question about #___