Name_____ Date_____ Period_____

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

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.

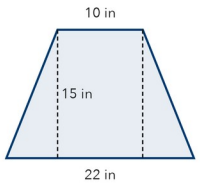
a. bases 10 in and 22 in _____

b. bases 8 m and 18 m _____

c. bases 12 cm and 20 cm _____

d. bases 17 m and 27 m _____

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

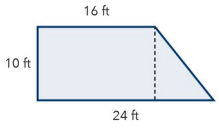


a. Area of the rectangle _____ in²

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 8 m and 18 m and a height of 6 m. Find its area.

Hint *Split the leftover 18 − 8 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 11 yd and 19 yd, and the height is 13 yd. Find its area.

Show your work.

Answer_____ yd²

6. **Tray and Mat.** A lunch tray is an isosceles trapezoid with bases 19 in and 29 in and a height of 16 in. A placemat is a rectangle 24 in by 16 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 17 m and 27 m and a height of 10 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 10 ft and 18 ft and a height of 6 ft. Decking costs $8 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. **Kwame's Work.** A trapezoid has bases 11 m and 21 m and a height of 10 m. Kwame cut it into a rectangle and two triangles, then wrote: "Area = 11 × 10 = 110 m²." Explain the mistake and find the correct area.

TEST PRACTICE

choose the best answer

10. A trapezoid can be decomposed into a rectangle and –

A one circle **B** one or two triangles

C two squares **D** a hexagon

11. A rectangle 9 cm by 4 cm plus a triangle with area 10 cm² gives a total area of –

A 23 cm² **B** 36 cm² **C** 46 cm² **D** 56 cm²

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

384	200	672	108	170	220	270	195	240	78
I	O	E	X	Z	N	Q	B	C	M

#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 #___