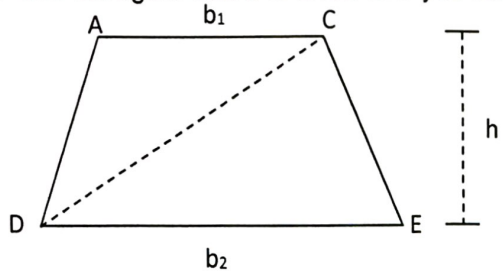
8.1 Areas of Triangles and Special Quadrilaterals Practice Day 3 **Name** Key

Geometry 3313 **Date**_____ **Period** ____

Learning Targets

- **I can apply the area formula(s) of Trapezoids to solve problems.**

1. Use the figure below to show how you can use two triangles to find the area formula of a trapezoid.



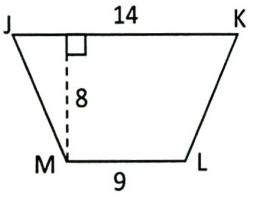
Area of $\Delta ACD = \frac{1}{2} b_1 h$

Area of $\Delta DCE = \frac{1}{2} b_2 h$

Total Area $= \frac{1}{2} b_1 h + \frac{1}{2} b_2 h$

$= \frac{1}{2} h (b_1 + b_2)$

2. Bob and Dave are finding the area of trapezoid JKLM. Who is correct and why?



Bob is correct, Using order of operations, one must add the 14 and 9 first before multiplying.

Dave's solution:

$A = \frac{1}{2}(8)(14+9)$

$A = \frac{1}{2}(8)(14)+9$

$A = 56+9$

$A = 65\,units^2$

Bob's solution:

$A = \frac{1}{2}(8)(14+9)$

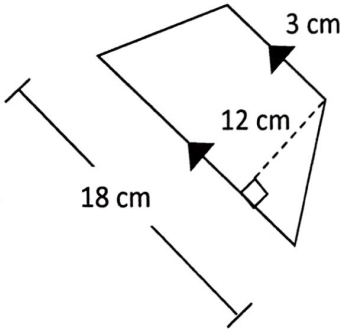
$A = \frac{1}{2}(8)(23)$

$A = 4(23)$

$A = 92\,units^2$

Find the area of the given trapezoids:

3.

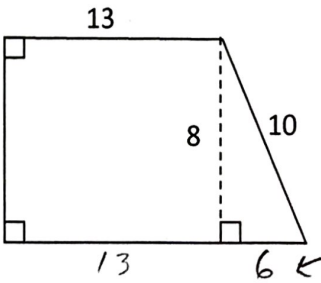


$A = \frac{1}{2} \cdot 12(18+3)$

$A = 6 \cdot 21$

$A = \boxed{126\ cm^2}$

4.



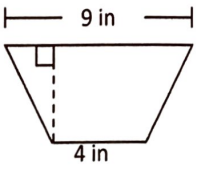
use Pythagorean Theorem

$A = \frac{1}{2} \cdot 8(13+19)$

$A = 4 \cdot 32$

$A = \boxed{128\ units^2}$

5. The area of the trapezoid at the right is 26 in². Find the missing height.



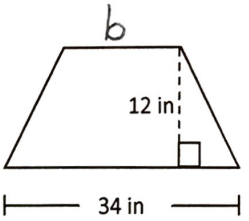
$26 = \frac{1}{2} \cdot h (9+4)$

$52 = h \cdot 13$

$4 = h$

4in

6. The area of the trapezoid at the right is 288 in². Find the missing base.



$288 = \frac{1}{2} \cdot 12 (b + 34)$

$288 = 6 (b+34)$

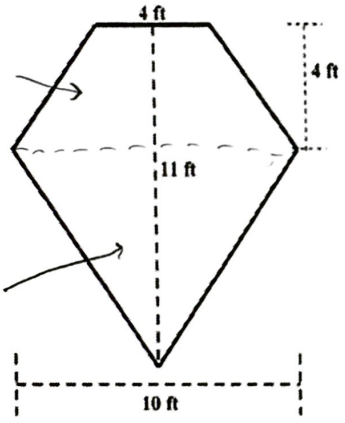
$48 = b + 34$

$14 = b$

14in

Find the area of the complex shapes.

7.



Area of Trapezoid

$A = \frac{1}{2} \cdot 4 (4+10)$

$A = 2 \cdot 14$

$A = 28 ft^2$

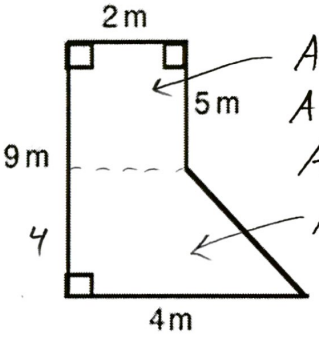
Area of Triangle

$A = \frac{1}{2} \cdot 10 \cdot 7$

$A = 35 ft^2$

Total Area = 63 ft^2

8.



Area of Rectangle

$A = 2 \cdot 5$

$A = 10 m^2$

Area of Trapezoid

$A = \frac{1}{2} \cdot 4 (2+4)$

$A = 2 \cdot 6$

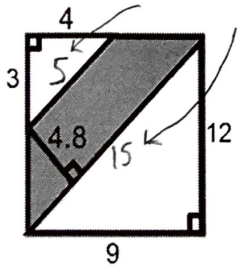
$A = 12 m^2$

Total Area = 10 + 12

= 22 m^2

Find the area shaded area in each figure.

9.



Use Pythagorean Theorem

Area of Trapezoid

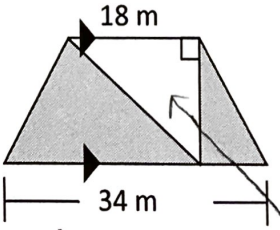
$A = \frac{1}{2} \cdot 4.8 (5+15)$

$A = 2.4 \cdot 20$

$A = 48$

48 units²

10.



Area of Trapezoid

$A = \frac{1}{2} \cdot 16 (18+34)$

$A = 8 \cdot 52$

$A = 416 m^2$

Shaded Area

416 − 144

272 m^2

Area of Triangle

$A = \frac{1}{2} \cdot 18 \cdot 16$

$= 144 m^2$