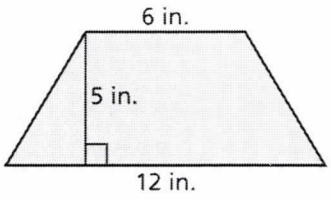
Name Answers Date

Geometry – Area of Trapezoids

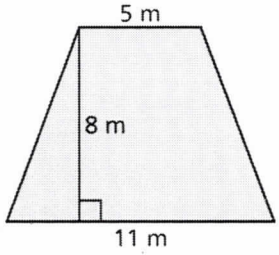
Find the area of each polygon. Show all necessary work.

1)



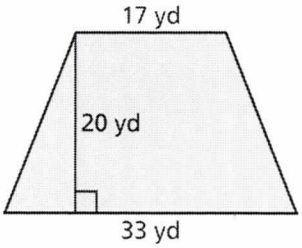
$A = \frac{1}{2}(b_1+b_2)h$
$= \frac{1}{2}(6+12)5$
$= \frac{1}{2}(18)5$
$= \frac{1}{2}(90)$
$= 45 in^2$

2)



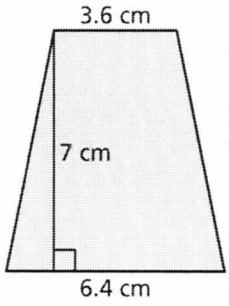
$A = \frac{1}{2}(b_1+b_2)h$
$= \frac{1}{2}(5+11)8$
$= \frac{1}{2}(16)8$
$= \frac{1}{2}(128)$
$= 64 m^2$

3)



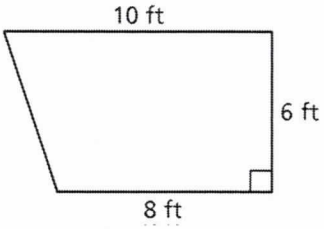
$A = \frac{1}{2}(b_1+b_2)h$
$= \frac{1}{2}(17+33)20$
$= \frac{1}{2}(50)20$
$= \frac{1}{2}(1000)$
$= 500 yd^2$

4)



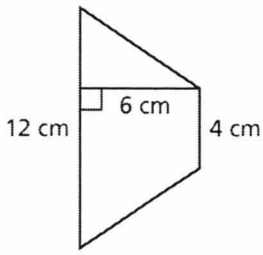
$A = \frac{1}{2}(b_1+b_2)h$
$= \frac{1}{2}(3.6+6.4)7$
$= \frac{1}{2}(10)7$
$= \frac{1}{2}(70)$
$= 35 cm^2$

5)



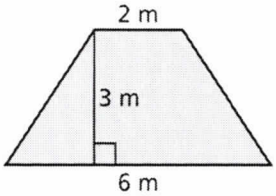
$A = \frac{1}{2}(b_1+b_2)h$
$= \frac{1}{2}(10+8)6$
$= \frac{1}{2}(18)6$
$= \frac{1}{2}(108)$
$= 54 ft^2$

6)



$A = \frac{1}{2}(b_1+b_2)h$
$= \frac{1}{2}(4+12)6$
$= \frac{1}{2}(16)6$
$= \frac{1}{2}(96)$
$= 48 cm^2$

7) Describe and correct the error in finding the area of the trapezoid.



$A = \frac{1}{2}(3)(2)(6) = 18 m^2$

Error: They multiplied the bases instead of adding

Correction: $A = \frac{1}{2}(2+6)3$
$= \frac{1}{2}(8)3$
$= \frac{1}{2}(24)$
$= 12 m^2$

Complete the following.

8) A sign is in the shape of a trapezoid with a bases of 12 inches and 9 inches and a height of 8 inches. Find the area of the sign.

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

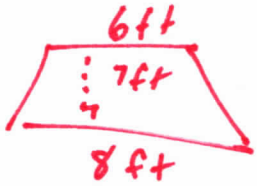
$= \frac{1}{2}(9+12)8$

$= \frac{1}{2}(21)8$

$= \frac{1}{2}(168)$

$= 84 in^2$

9) You want to put a trapezoidal table in a rectangular dining room. The table has bases of 8 feet and 6 feet and has a height of 7 feet. How many square feet of area will you have left over in that 11 by 8 feet rectangular room?



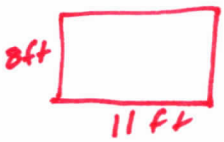
$A = \frac{1}{2}(b_1 + b_2)h$

$= \frac{1}{2}(6+8)7$

$= \frac{1}{2}(14)7$

$= 7 \times 7$

$= 49 ft^2$



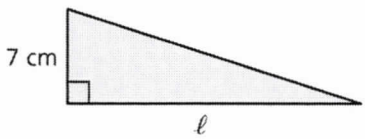
$A = bh$

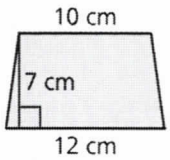
$= 11 \times 8$

$= 88 ft^2$

$88 - 49 = 39 ft^2$ left

10) The triangle and the trapezoid have the same area. What is the length l of the triangle?





② $A = \frac{1}{2}bh$

$77 = \frac{1}{2} \times l \times 7$

$\frac{77}{3.5} = \frac{3.5l}{3.5}$

$22 cm = l$

① $A = \frac{1}{2}(b_1 + b_2)h$

$= \frac{1}{2}(10+12)7$

$= \frac{1}{2}(22)7$

$= 11 \times 7$

$= 77 cm^2$