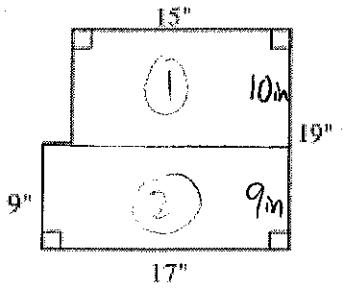
Geometry A

Name KEY

Composite Shapes & Shaded Region: Area Practice

Find the areas of the figures below. Show division(s) on drawing and work for each area. Label units correctly.

1.

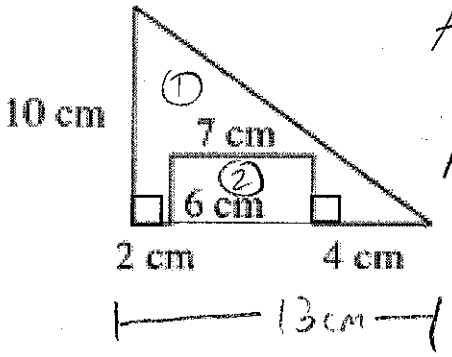


$A_{①} = 15 \cdot 10 = 150 \text{ in}^2$

$A_{②} = 9 \cdot 17 = 153 \text{ in}^2$

Total $A = 303 \text{ in}^2$

2.

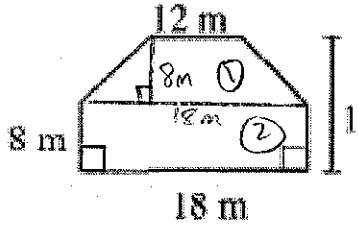


$A_{①} = \frac{13 \cdot 10}{2} = 65 \text{ cm}^2$

$A_{②} = 6 \cdot 7 = 42 \text{ cm}^2$

$A_{\text{shape}} = 65 - 42 = 23 \text{cm}^2$

3.

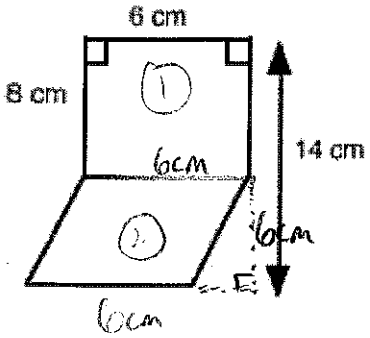


$A_{①} = \frac{(12+18) \cdot 8}{2} = 120 \text{ m}^2$

$A_{②} = 8 \cdot 18 = 144 \text{ m}^2$

Total $A = 264 \text{ m}^2$

4.

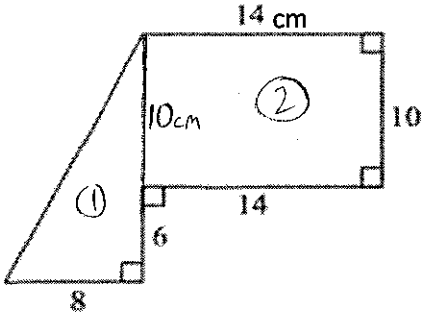


$A_{①} = 8 \cdot 6 = 48 \text{ cm}^2$

$A_{②} = 6 \cdot 6 = 36 \text{ cm}^2$

Total $A = 84 \text{cm}^2$

5.

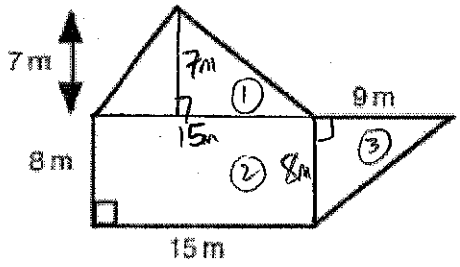


$A_{①} = \frac{8 \cdot 16}{2} = 64\,cm^2$

$A_{②} = 14 \cdot 10 = 140\,cm^2$

Total $A = 204\,cm^2$

6.



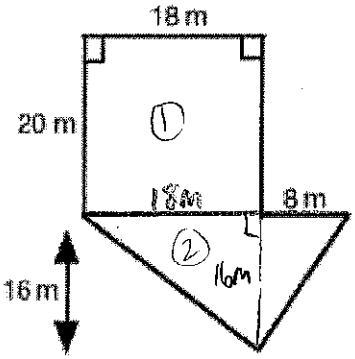
$A_{①} = \frac{15 \cdot 7}{2} = 52.5\,m^2$

$A_{②} = 8 \cdot 15 = 120\,m^2$

$A_{③} = \frac{8 \cdot 9}{2} = 36\,m^2$

Total $A = 208.5\,m^2$

7.



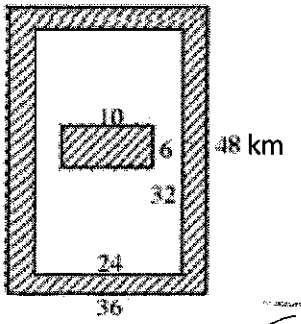
$A_{①} = 20 \cdot 18 = 360\,m^2$

$A_{②} = \frac{26 \cdot 16}{2} = 208\,m^2$

Total $A = 568\,m^2$

Find the area of the shaded region. Show all work for each area. Label units correctly.

8.



$A_{\text{large rect.}} = 36 \cdot 48 = 1728\,km^2$

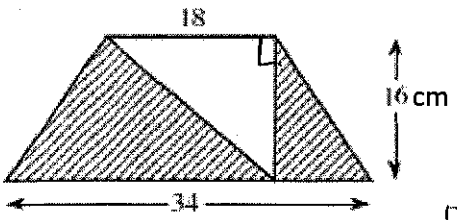
$A_{\text{Med rect.}} = 24 \cdot 32 = 768\,km^2$

$A_{\text{small rect.}} = 10 \cdot 6 = 60\,km^2$

$A_{\text{Shaded}} = (1728 - 768) + 60 = 1020\,km^2$

9.

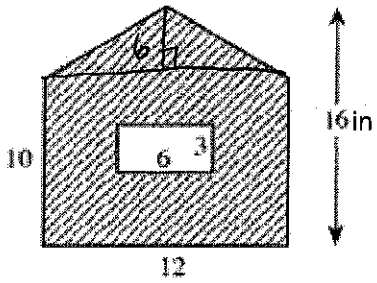
$A_{Trapezoid} = \frac{(18+34)\cdot 16}{2} = 416\ cm^2$



$A_{\Delta} = \frac{18\cdot 16}{2} = 144\ cm^2$

$A_{shaded} = 416 - 144 = 272\ cm^2$

10.



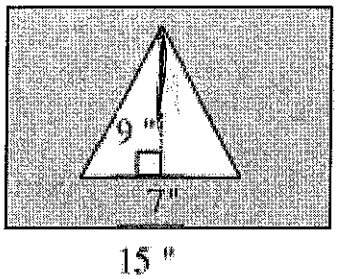
$A_{\Delta} = \frac{12\cdot 6}{2} = 36\ in^2$

$A_{lg\ rect.} = 10\cdot 12 = 120\ in^2$

$A_{sm\ rect} = 6\cdot 3 = 18\ in^2$

$A_{shaded} = (36+120) - 18 = 138\ in^2$

11.



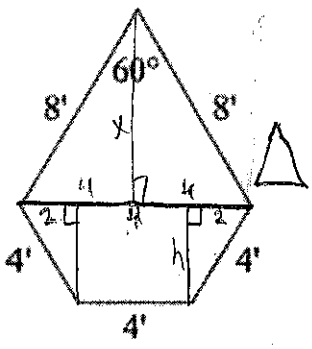
$A_{rect} = 15\cdot 12 = 180\ in^2$

$A_{\Delta} = \frac{7\cdot 9}{2} = 31.5\ in^2$

$A_{shaded} = 180 - 31.5 = 148.5\ in^2$

Challenge Question: Find the area. Show division(s) on drawing and work for each area. Label units correctly.

12.



Trapezoid: $h^2 + 2^2 = 4^2$

$h \approx 3.46\ ft$

$A_{Trape.} = \frac{(4+8)\cdot 3.46}{2} = 20.76\ ft^2$

Δ: $x^2 + 4^2 = 8^2$

$x \approx 6.93\ ft$

$A_{\Delta} = \frac{8\cdot 6.93}{2} = 27.72\ ft^2$

Total $A = 48.48\ ft^2$