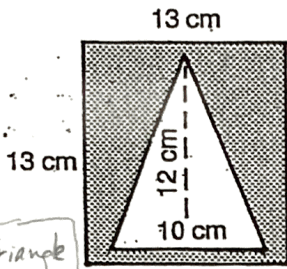


Area—Triangles, Trapezoids

Find the total area of the shaded region or regions.

1.



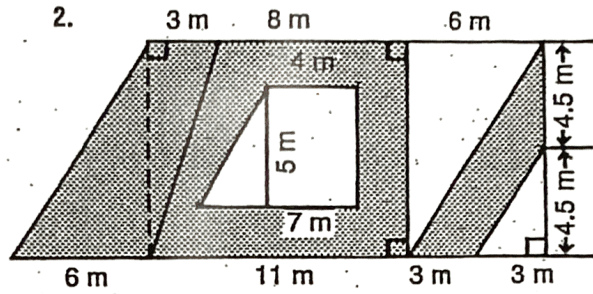
Square:
 $A = bh$
 $A = 13 \cdot 13$
 $A = 169 \text{ cm}^2$

Triangle:
 $A = \frac{1}{2}bh$
 $= \frac{1}{2} \cdot 10 \cdot 12$
 $= 5 \cdot 12$
 $= 60 \text{ cm}^2$

Square-Triangle
 $169 - 60 = 109$

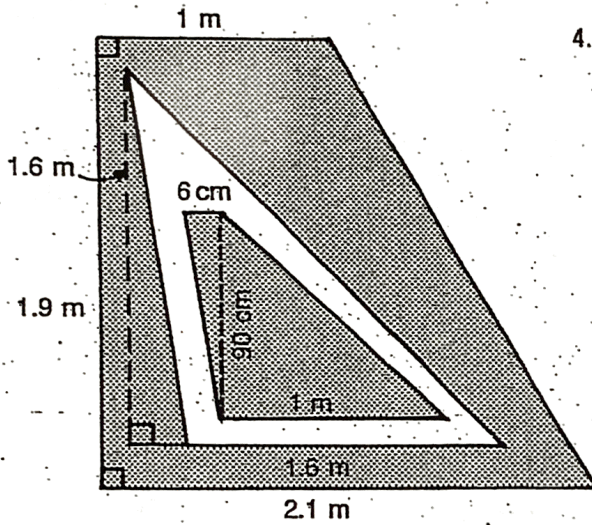
109 cm^2

2.



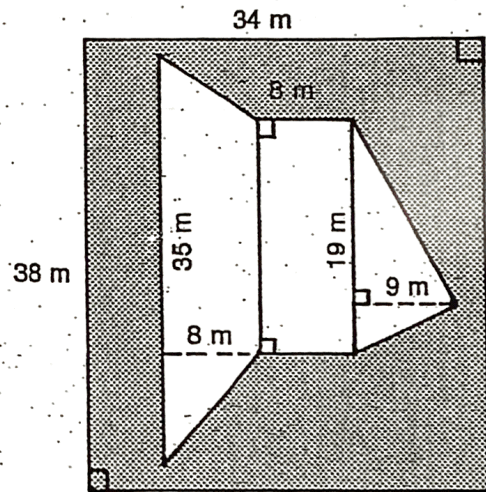
see work below

3.



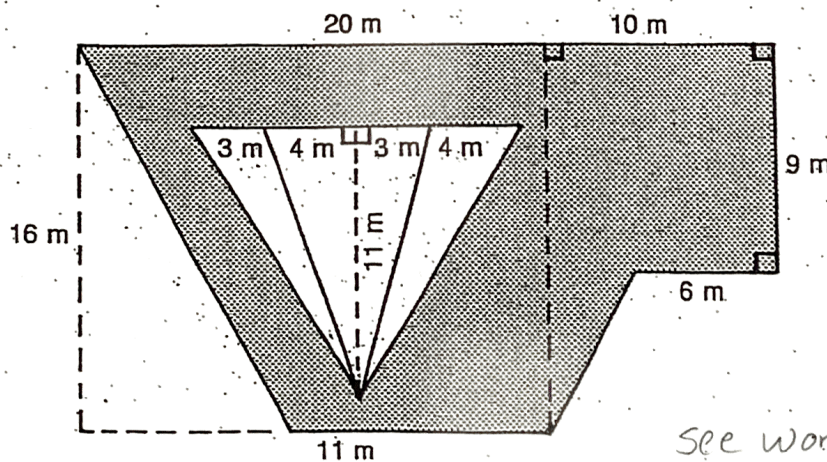
see work below

4.

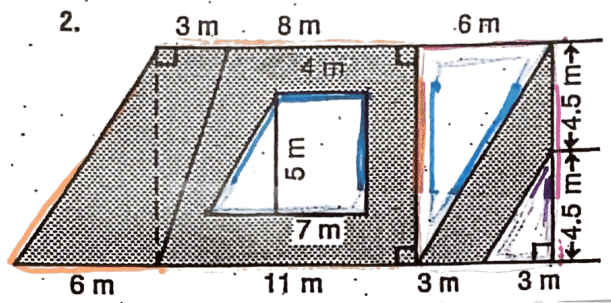


see work below

5.



see work below



Area - Triangles, Trapezoids

E77 Worksheet

Large
Trapezoid: $A = h \frac{b_1 + b_2}{2}$
 $A = 9 \cdot \frac{11 + 17}{2}$
 $A = 9 \cdot \frac{28}{2}$
 $A = 9 \cdot 14$
 $A = \underline{126 \text{ m}^2}$

small
Trapezoid: $A = h \frac{b_1 + b_2}{2}$
 $= 5 \cdot \frac{4 + 7}{2}$
 $= 5 \cdot \frac{11}{2}$
 $= 5 \cdot (5.5)$
 $= \underline{27.5 \text{ m}^2}$

Large trapezoid - small trapezoid

$\underline{126} - \underline{27.5} = \underline{98.5 \text{ m}^2}$ area of shaded part

Large Rectangle

$A = bh$
 $= 6 \cdot 9$
 $= \underline{54 \text{ m}^2}$

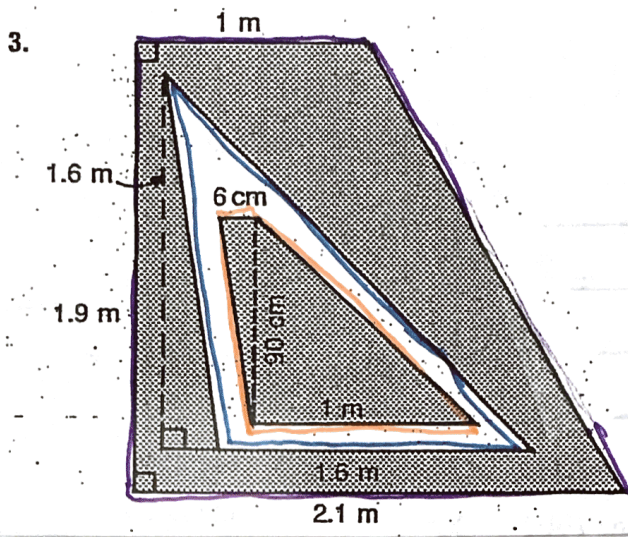
Large Triangle + Small Triangle

$A = \frac{1}{2}bh$ ($b_1 + b_2$) $A = \frac{1}{2}bh$
 $= \frac{1}{2} 6 \cdot 9$ $= \frac{1}{2} 3 \cdot 9$
 $= \underline{27 \text{ m}^2}$ $= \underline{13.5 \text{ m}^2}$

$\underline{54 \text{ m}^2} - \underline{27 \text{ m}^2} - \underline{13.5 \text{ m}^2} = \underline{13.5 \text{ m}^2}$ area of shaded part

Total Shaded Part

$\underline{98.5 \text{ m}^2} + \underline{13.5 \text{ m}^2} = \underline{112 \text{ m}^2}$



Large Trapezoid:

$$\begin{aligned}
 A &= \frac{1}{2}h(b_1 + b_2) \\
 &= \frac{1}{2}(1.9)(1 + 2.1) \\
 &= (0.95)(3.1) \\
 &= \underline{2.945 \text{ m}^2}
 \end{aligned}$$

Triangle

$$\begin{aligned}
 A &= \frac{1}{2}bh \\
 &= \frac{1}{2}(1.6)(1.6) \\
 &= (0.8)(1.6) \\
 &= \underline{1.28 \text{ m}^2}
 \end{aligned}$$

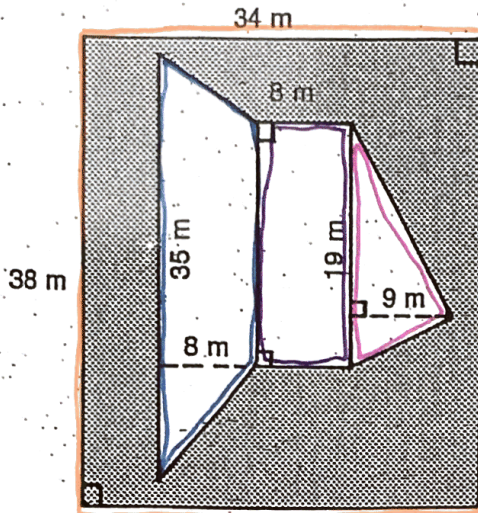
Small Trapezoid

$$\begin{aligned}
 A &= \frac{1}{2}h(b_1 + b_2) \\
 &= \frac{1}{2}(0.06 \text{ m})(1 \text{ m} + 1.6 \text{ m}) \\
 &= (0.03 \text{ m})(2.6 \text{ m}) \\
 &= \underline{0.078 \text{ m}^2}
 \end{aligned}$$

$$\underline{\text{Large Trapezoid}} - \underline{\text{Triangle}} + \underline{\text{Small Trapezoid}} = 2.945 \text{ m}^2 - 1.28 \text{ m}^2 + 0.477 \text{ m}^2 = \underline{\underline{1.142 \text{ m}^2}}$$

Area of shaded area

4.



Area of Center Rectangle:

$$\begin{aligned} A &= bh \\ &= 8 \cdot 19 \\ &= \underline{152 \text{ m}^2} \end{aligned}$$

Area of far left trapezoid:

$$\begin{aligned} A &= \frac{1}{2}bh \\ &= \frac{1}{2} \cdot 19 \cdot 9 \\ &= \underline{85.5 \text{ m}^2} \end{aligned}$$

$$\begin{aligned} &\underline{\text{Area of large rectangle}} - \underline{\text{Center Rectangle}} - \underline{\text{left Trapezoid}} - \underline{\text{right}} \\ &1292 - 152 - 216 - 85.5 = \underline{\underline{838.5 \text{ m}^2}} \quad \underline{\underline{\text{side triangle}}} \end{aligned}$$

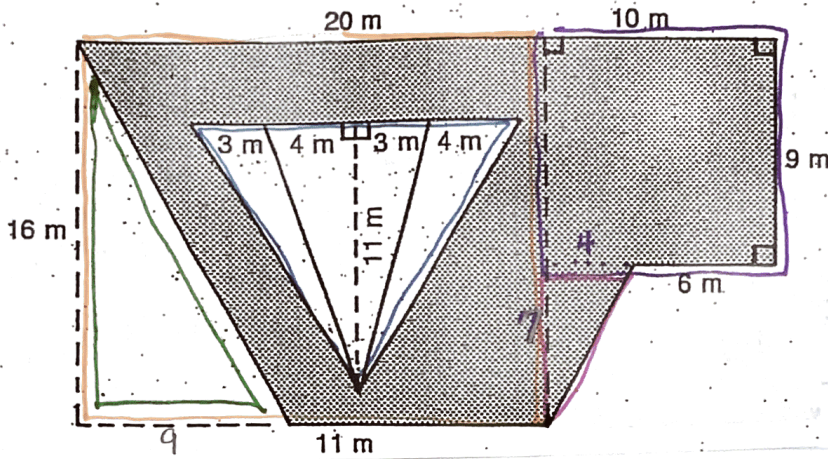
Area of Large Rectangle:

$$\begin{aligned} A &= bh \\ &= 34 \cdot 38 \\ &= \underline{1292 \text{ m}^2} \end{aligned}$$

Area of far right triangle:

$$\begin{aligned} A &= \frac{1}{2}h(b_1 + b_2) \\ &= \frac{1}{2} \cdot 8 \cdot (35 + 19) \\ &= 4(54) \\ &= \underline{216 \text{ m}^2} \end{aligned}$$

5.

Area of Rectangle:

$$A = bh$$

$$= 10 \cdot 9$$

$$= \underline{90 \text{ m}^2}$$

Area of Triangle

$$A = \frac{1}{2}bh$$

$$= \frac{1}{2}(4)(7)$$

$$= \underline{14 \text{ m}^2}$$

$$90 + 14 = \underline{104 \text{ m}^2}$$

shaded area

Large Rectangle: - Large Middle Triangle - Far right triangle

$$A = bh$$

$$= 20 \cdot 16$$

$$= \underline{320 \text{ m}^2}$$

$$A = \frac{1}{2}bh$$

$$= \frac{1}{2} \cdot (14)(11)$$

$$= \underline{77 \text{ m}^2}$$

$$A = \frac{1}{2}bh$$

$$= \frac{1}{2}(9)(16)$$

$$= \underline{72 \text{ m}^2}$$

$$320 - 77 - 72 = \underline{171 \text{ m}^2}$$

$$+ \underline{104 \text{ m}^2}$$

$$\underline{\underline{275 \text{ m}^2}} \text{ total shaded area}$$