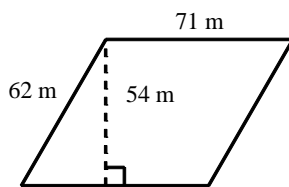


*P.I. G.G.38: Investigate, justify, and apply theorems about parallelograms involving their angles, sides, and diagonals*

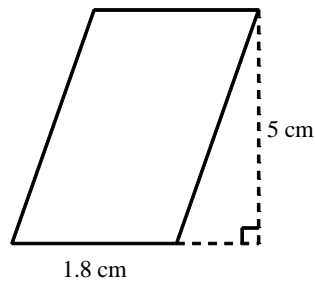
Find the area:

1.



- [A]  $3834 \text{ m}^2$     [B]  $3591 \text{ m}^2$     [C]  $4402 \text{ m}^2$     [D]  $4118 \text{ m}^2$

2.



3. Graph the lines  $y = -2$ ,  $y = 4$ ,  $y = 2x$ , and  $y = 2x - 12$ , and find the area of the resulting parallelogram.

4. The area of a parallelogram is  $128 \text{ cm}^2$ . The height is one half the base. Find the perimeter of the parallelogram.

- [A] 16 cm    [B] 48 cm    [C] 128 cm    [D] 8 cm    [E] not enough information

5. Given parallelogram  $ABCD$ , for what value of  $m\angle A$  will the parallelogram have the greatest area? Explain.

[1] A

[2]  $9 \text{ cm}^2$

[3] 36 square units

[4] E

For  $m\angle A = 90$ . Any larger or smaller angle will result in a shorter height and, hence, a

[5] smaller area.