

QUESTION

1. A rectangular prism has a length of 10 units, a width of 6 units, and a height of 4 units. What is the surface area of the prism?



ANSWER

1. The surface area of a rectangular prism is the sum of the areas of all six faces. The formula for the surface area of a rectangular prism is $2lw + 2lh + 2wh$, where l is the length, w is the width, and h is the height.

Substituting the given values, we get:

$$\begin{aligned} \text{Surface Area} &= 2lw + 2lh + 2wh \\ &= 2(10)(6) + 2(10)(4) + 2(6)(4) \\ &= 120 + 80 + 48 \\ &= 248 \end{aligned}$$

CONCLUSION

The surface area of the rectangular prism is 248 square units. The surface area of a rectangular prism is the sum of the areas of all six faces. The formula for the surface area of a rectangular prism is $2lw + 2lh + 2wh$, where l is the length, w is the width, and h is the height. Substituting the given values, we get: $2(10)(6) + 2(10)(4) + 2(6)(4) = 120 + 80 + 48 = 248$.

Therefore, the surface area of the rectangular prism is 248 square units.