

Applications of Trigonometric Functions

Learning Objectives

• Use sinusoidal functions to solve real-world problems

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- 1. The temperature in an apartment varies with the time of day according to the equation $T(t) = 68 - 3 \cos \left[\frac{\pi}{12} (t+2) \right]$, where *T* is in degrees Fahrenheit, and *t* in hours (midnight: t = 0).
 - a. What temperature is the apartment at noon?

b. At what temperature is the apartment the warmest? When does that happen?

ANSWER KEY

1. a. 70.6 degrees, b. 1600 hours, or 4 p.m. the room is 71 degrees

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