

6.12 Speed of Two Fans

Reflect and Apply

Veronica and Rodney are now studying two fans. Using Graphical Analysis, they have the following equations that model the **period vs. time** of the fans.

$$\text{Fan 1: } y = .309 + .04e^{.077x} \qquad \text{Fan 2: } y = .314 + .036e^{.071x}$$

Use these two equations, and your experience from the "Speed of the Fan" activity to answer the following question. **Each answer must be followed by a justification or work to back up your answer.**

1. Determine which fan was spinning faster at the beginning.
2. Evaluate the speed of each fan at 12 seconds.

Fan 1 _____ Fan 2 _____

3. Determine which of the two fans is slowing down more quickly than the other.
4. If the radius of the first fan is 1.5 feet and it has 4 blades, how fast would the fan be spinning at 12 seconds?
5. If the second fan has 3 blades with a radius of 2 feet, how fast would the fan be spinning at 12 seconds?