Lesson 8.5 Practice: Modeling Periodic Motion

School Launch · Trigonometry · Unit 8: Applications · Worksheet A

Scientific calculator

Name _____ Date _____ Score _____ / 10

Show your work under each problem, one step per line, and check your answer. Word problems: name the unknown, write the equation, solve, and answer in a sentence with units.

1. A Ferris wheel of radius 46 ft has its center 51 ft up and turns once every 9 minutes, starting at the bottom. Model the height and find it at $t = 11$ min (nearest tenth). EASY

2. A Ferris wheel of radius 20 ft has its center 29 ft up and turns once every 9 minutes, starting at the bottom. Model the height and find it at $t = 8$ min (nearest tenth). EASY

3. A Ferris wheel of radius 52 ft has its center 55 ft up and turns once every 6 minutes, starting at the bottom. Model the height and find it at $t = 1$ min (nearest tenth). EASY

4. A Ferris wheel of radius 30 ft has its center 39 ft up and turns once every 4 minutes, starting at the bottom. Model the height and find it at $t = 4$ min (nearest tenth). MEDIUM

5. A Ferris wheel of radius 32 ft has its center 40 ft up and turns once every 8 minutes, starting at the bottom. Model the height and find it at $t = 9$ min (nearest tenth). MEDIUM

6. A Ferris wheel of radius 29 ft has its center 37 ft up and turns once every 10 minutes, starting at the bottom. Model the height and find it at $t = 5$ min (nearest tenth). MEDIUM

7. A Ferris wheel of radius 26 ft has its center 32 ft up and turns once every 8 minutes, starting at the bottom. Model the height and find it at $t = 13$ min (nearest tenth). MEDIUM

8. A Ferris wheel of radius 29 ft has its center 35 ft up and turns once every 5 minutes, starting at the bottom. Model the height and find it at $t = 5$ min (nearest tenth). HARD

9. A Ferris wheel of radius 12 ft has its center 14 ft up and turns once every 7 minutes, starting at the bottom. Model the height and find it at $t = 15$ min (nearest tenth). HARD

10. A Ferris wheel of radius 28 ft has its center 37 ft up and turns once every 9 minutes, starting at the bottom. Model the height and find it at $t = 14$ min (nearest tenth). HARD