

Reflection and Self-Assessment**Completion:** Circle the statement that best describes the completion of this practice.

- I completed every question on the practice.
- I did not complete some questions on the practice because:

Answer Checking: Circle the statement that best describes how you checked your answers

- I checked all my answers against the key at the back and corrected any that were incorrect.
- I did not check all my answers and correct any mistakes because:

Online Worked Solution: Circle the statement that best describes how you used the online worked solutions.

- I did not use the online worked solution at all.
- I used the online solution to understand some questions I got incorrect.
- I used the online solution to help me learn how to answer some questions.

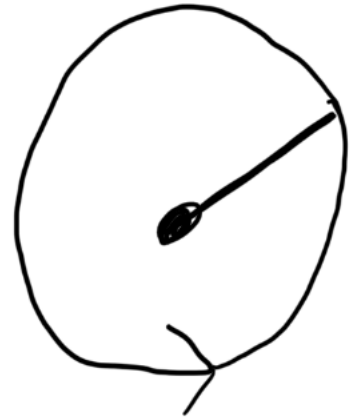
Confidence: Circle the statement that best describes your confidence in answering questions of this type in the future.

- I am confident I can answer nearly any question of this type correctly without using notes or other assistance.
- I am confident I can answer **MOST** questions of this type correctly without using notes or other assistance.
- I am **NOT** confident I can answer most questions of this type correctly without using notes or other assistance.

Time: Circle the statement below that best describes the total amount of time you spent actively working on this practice:

| | | | | |
|-------------------|---------------------------|-----------------------------|------------------------------|----------------------|
| Less than an hour | Between one and two hours | Between two and three hours | Between three and four hours | More than four hours |
|-------------------|---------------------------|-----------------------------|------------------------------|----------------------|

1. A ball is being swung in a counterclockwise circle connected to a string, at the top of the circle the string is released, show what direction the ball will move after being released.



2. A 2.3 kg object is travelling at a constant velocity around a circle of radius 0.66 metres. It completes 52 circles per second.
 - a. What is the frequency of the object?
 - b. What is the period?
 - c. What is the speed of the object?
 - d. What is the centripetal acceleration of the object?
 - e. What is the centripetal force acting on the object?

3. A 550 kg plane flies in a circle of radius 250 metres at a constant velocity of 255 m/s.
- a. What is the period?

b. What is the frequency?

c. What is the centripetal acceleration of the object?

d. What is the centripetal force acting on the object?

6. A 1200 kg car is turning a corner of radius 122 m, the coefficient of friction between the car and the ground is 0.27. What is the maximum speed it can safely round the corner?

7. A 1.2 kg ball is swung in a horizontal circle of radius 0.45 metres. The force on the string is 46 N. At one point the ball is released. How fast will the ball be moving when it is released?

| Answer Key | | | | |
|-------------------------|--------------|---------------|--------------------------|---|
| 1) Due West | 2a) 52 Hz | 2b) 0.019 sec | 2c) 220 m/s | 2d) 7.0×10^4 m/s ² |
| 2e) 1.6×10^5 N | 3a) 6.16 sec | 3b) 0.16 Hz | 3c) 260 m/s ² | 3d) 1.4×10^5 N |
| 4) 3.4 m/s | 5a) 12 000 N | 5b) 0.81 | 6) 18 m/s | 7) 4.2 m/s |