Name _____ Date _____ Score _____

Free sample

Forces and Motion

Six questions to try. Then check your answers on page 2.

Remember

v = d ÷ t · a = change in v ÷ t · F = m × a. Net force: add forces in the same direction, subtract opposite ones.

1 A dog runs **200 m** in **40 s**. What is its average speed?

2 A line on a distance-time graph is **flat**. What is the object doing?

3 Push **35 N right**, friction **15 N left**. Find the net force. Balanced or unbalanced?

4 A scooter speeds up from **0 to 18 m/s** in **6 s**. Acceleration?

5 What net force makes a **50 kg** skateboarder accelerate at **2 m/s²**?

6 A swimmer pushes water **backward**. Use Newton's third law to explain why she moves forward.

Name _____ Date _____ Score _____

Answers

1. **5 m/s** — v = 200 ÷ 40 = 5 m/s.

2. **it is stopped** — The distance does not change.

3. **20 N right; unbalanced** — 35 - 15 = 20 N right.

4. **3 m/s²** — 18 ÷ 6 = 3 m/s².

5. **100 N** — F = 50 × 2 = 100 N.

6. **The water pushes her forward with an equal and opposite force.** — The two forces act on different objects.

In the full pack

17 questions in 5 parts (1 · speed and velocity, 2 · acceleration, 3 · net force and friction, 4 · Newton's laws, 5 · a friction investigation), a notes page, a full answer key, a 14-slide teaching deck with a ramp practical, and a 22-question online practice set (10 questions are free online).

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