# A5 · How the nervous system is organized · Worked examples and practice

Name: _____ Date: _____

## Worked examples

Read these first. There is one for each kind of question in this lesson.

### Example 1 · Predict an autonomic effect

You are startled by a loud bang. What happens to your heart rate?

1. Step 1: the body is under stress.
2. Step 2: the sympathetic nervous system acts.
3. Step 3: a faster heart helps the body act.
4. Step 4: the heart rate goes up.

**Answer: The heart rate goes up.**

### Example 2 · Place a part in the right division

A motor neuron runs from the spinal cord to a leg muscle. Which division is it in?

1. It is outside the brain and spinal cord, so it is in the peripheral nervous system.
2. A leg muscle is a skeletal muscle, under voluntary control.

**Answer: The sensory-somatic nervous system.**

## Practice

Questions 1 to 4 are easy. Questions 5 to 8 are medium. Questions 9 and 10 are harder.

EASY

**1.** Name the two parts of the central nervous system.

EASY

**2.** State what the letters PNS stand for.

EASY

**3.** Name the part of the peripheral nervous system that is involuntary.

EASY

**4.** Name the two parts of the autonomic nervous system.

MEDIUM

**5.** Explain the difference between voluntary and involuntary control. Give one example of each.

MEDIUM

**6.** State what the sympathetic nervous system does to the liver and to the pupils.

MEDIUM

**7.** Name the neurotransmitter the parasympathetic nervous system releases at an organ.

MEDIUM

**8.** You are falling asleep after a calm evening. Use the four steps to predict what happens to your pupils.

HARDER

**9.** A reflex uses sensory-somatic nerves, but it is not voluntary. Explain how both statements can be true.

HARDER

**10.** A drug copies norepinephrine at the organs. Predict its effect on heart rate and on peristalsis. Explain.