1. A 60-year old man awakens one morning to find that he has double vision. When he
tries to get out of bed, he notices that he cannot move his left arm and leg and his left
side seems numb. While in the emergency dept. you find the following symptoms:
   A. paralysis of the left side of the body including the arm and leg.
   B. Increased deep tendon reflexes and muscle tone in the arm and leg on the left.
   C. Babinsky sign in the left foot.
   D. The right eye is turned medially but the left eye is positioned normally.
   E. When asked to look to the right side, his left eye turns medially but his right
      eye does not move.
   F. His lower face on the left side droops.
   G. There is loss of tactile sensation on the left side of the body including the arm
      and leg. Response to pin prick on the body is normal.
   H. There is loss of tactile and pin prick sensation on the left side of the face.

2. A 75-year old man awakens one morning and finds he has trouble getting out of bed.
   He notices that he cannot move his right arm and leg and his right side seems numb. He
   says that his tongue feels thick and doesn't move well. While in the ED you find the
   following symptoms:
   1. Paralysis of the arm, leg and trunk on the right side.
   2. Increased deep tendon reflexes and muscle tone in the arm and leg on the right.
   3. Babinski sign in the right foot.
   4. When asked to protrude his tongue, it deviates to the left.
   5. Both eyes open and close normally and his smile is normal.
   6. There is loss of tactile sensation on the right side of the body, but the face is
      normal.
   7. Response to pin prick on the right and left side of the body is normal.
   8. There is loss of pin prick sensation on the right side of the face.

3. A 40 year-old man complained of progressive difficulty using his right hand and a
   numb feeling in his left hand and leg. On examination, speech was fluent and cranial
   nerves were intact. Proprioceptive and tactile sensation were decreased in the right toes,
   leg, and fingers. Pinprick sense was decreased on the left leg, trunk, and arm. Weakness
   was noted in his right leg and hand. Tendon reflexes we increased on the right side and
   the Babinski sign was present on the right. (3)

4. A 65-year old man was watching TV when his wife noticed that the right side of his
   face drooped. Realizing that he had just had a stoke, she rushed him to the hospital.
   While examining him, you find the following symptoms:
   1. Paralysis of the arm, leg and trunk on the left side.
   2. Tendon reflexes in the left arm and leg were increased in amplitude and muscle
      tone in the left arm and leg was increased.
   3. Babinski sign was present in the left foot.
   4. When asked to close his eyes, only the left eye closed.
   5. When asked to smile, the mouth on the left side turned upward normally, but on
      the right side the corner of the mouth drooped downward.
6. When asked to wrinkle his forehead, the left side wrinkled but the right side remained smooth.

7. Tactile sensation on the right and left side of the body and face was normal.

8. He did not feel pinprick on the left side of the body, but the right side was normal.

5. A 29 year-old woman suddenly experienced double vision and weakness of her left upper and lower limbs. Neurological examination showed weakness of her left arm and leg accompanied by increased resistance to passive stretch, increased tendon reflexes, and the Babinski sign in her left foot. In addition, she had loss of tactile sensation and limb position sense on the left side in the leg, trunk, arm, and neck. Pin prick sensation was normal on the body, but absent on the left side of the face. Both eyes converged when she visually followed a probe as it was brought close to her nose. However, her right eye was deviated medially. When she attempted to gaze to the right, her left eye moved to the right but her right eye did not move.

6. An 80-year-old man collapsed suddenly while he was in the shower. He was taken to the hospital and regained consciousness after 2 days. A neurological exam showed paralysis of the right upper limb with hyperactive reflexes and increased muscle tone. The right arm was held in a flexed posture with the elbow and wrist bent. The right corner of his mouth drooped, but he could close and open both eyes equally on each side. There was loss of tactile sensation on the right upper limb and right side of the face and he could not distinguish the position of his right arm when it was moved passively. Pin prick was felt, but poorly localized in the right limb and right face. He also had a right lower homonymous quadrantanopsia.

7. A 60-year-old woman awoke one morning feeling dizzy with nausea, vomiting and unsteady gait. She was brought to the emergency room where a neurological exam revealed the following findings. Nystagmus was present bilaterally. Both pupils reacted normally to light, but the right pupil was smaller than the left, there was mild ptosis of the right eyelid, and the right side of the face appeared flushed. Eye movements were normal, as was her ability to close her eyes and her ability to smile. When a cotton swab was placed on the left side of her throat, there was a gag response, but when the right side was touched there was no response. Sensation to pin prick was absent on the right side of the face and also the left side of the neck, trunk and limbs. Tactile sensation and awareness of limb position were normal on both sides of the body and face. However, she could not stand without falling. Upper and lower limb reflexes were normal, strength was normal, and the plantar reflexes were flexor. The finger-to-nose test revealed a prominent tremor during movement and inaccuracy in movement in the right upper limb as the finger approached the nose, but the test was normal in the left upper limb. Rapid, alternating movements of the right hand were clumsy, but normal in the left hand. The heel-to-shin test indicated an inability to move the right leg smoothly or accurately, but the left leg was normal.
8. A 22-year-old man is brought to the emergency room after being shot outside his home during an argument with a neighbor. On examination you find the patient is alert, attentive, and responsive to questions indicating normal mental status. Cranial nerve function is also normal. However, there is paralysis of the \textbf{left} trunk and lower limb with increased muscle tone, increased deep tendon reflexes and Babinski sign. Muscle strength, deep tendon reflexes, and plantar reflex are normal on the \textbf{right} side. Sensation to pin prick is absent on the \textbf{right} side from the level of the nipple down, but normal on the \textbf{left}. Tactile sensation and position sense are normal on both sides.