



Within 5000 light years of our sun, there are 4 separate spiral arms. The following segments represent the locations of these four spiral arms:

<u>Outer Arm</u>	from (-80,+45)	to (+80, +45);
<u>Perseus Arm</u>	from (-80, +25)	to (+80, +25);
<u>Orion Arm</u>	from (-60, +25)	to (+80, -20);
<u>Sagittarius Arm</u>	from (-80, -25)	to (+80,-50).

The coordinates are given so that 5 units equals 300 light years.

Problem 1 - In what arms are the following objects located?

- | | |
|-----------------------------|-----------------------------------|
| A) Sun (0,0)? | D) Crab Nebula (0,+25) |
| B) Eagle Nebula (+40, -30)? | E) Lagoon Nebula (+10, -20) |
| C) Orion Nebula (-10, 0), | F) North American Nebula (+35, 0) |

Problem 2 - How many light years is the North American Nebula from our Sun?

Problem 1 -

- A) Orion Arm.
- B) Sagittarius Arm.
- C) Orion Arm.
- D) Perseus Arm.
- E) Sagittarius Arm.
- F) Orion Arm.

Problem 2 - We know that 5 units on the coordinate axis represents 300 light years, and that the sun is at the origin, so the North American Nebula is +35 units from the sun or $35 \times 300 = 10,500$ light years.]

