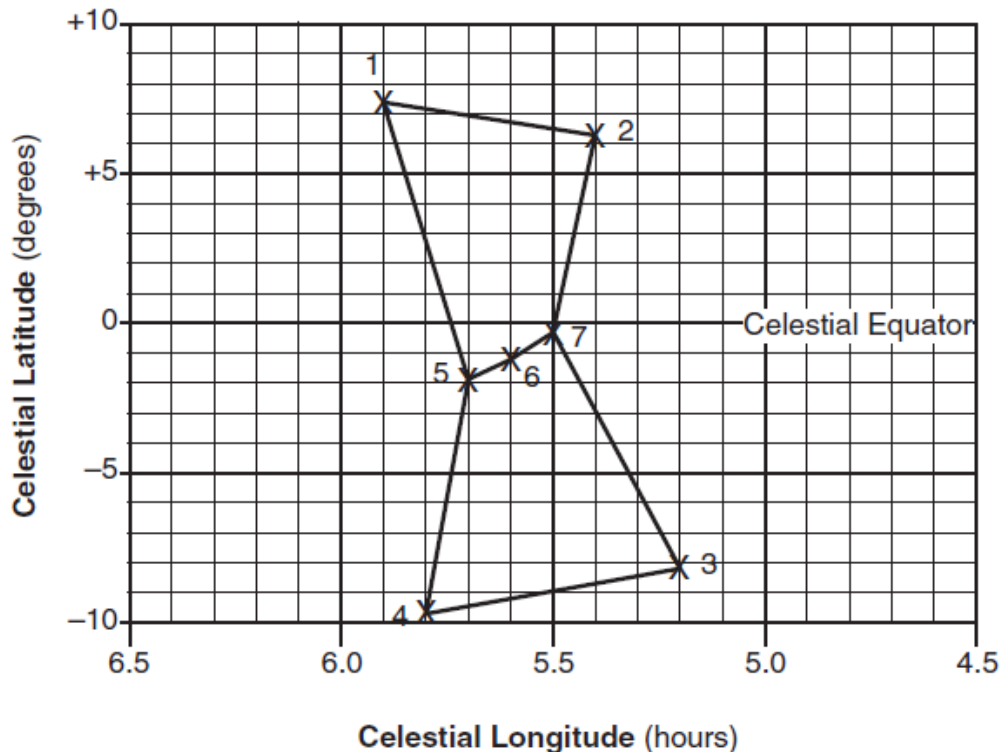# MIDTERM PART II REVIEW #1 - ANSWERS

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1. The picture should appear, and be labeled as shown below.

2. *Betelgeuse* is cooler and less luminous than *Rigel.* Both temperature and luminosity must be included to receive credit.

3. Our galaxy is known as the **Milky Way.**

4. **Earth's revolution** or **Earth revolves in its orbit**. – The reason why we see different constellations in different seasons is because the Earth is revolving around the Sun to a different position in the Solar System allowing different constellations to be viewed at night.

5. **isotherms** – By definition, isotherms are lines that connect points of equal temperature.

6. **B and D** - The temperature gradient would be the greatest where the isotherms are closest together.

7. **2.0 °C / meter** (note the ".0" in the final answer because the instructions say to round to nearest tenths place)

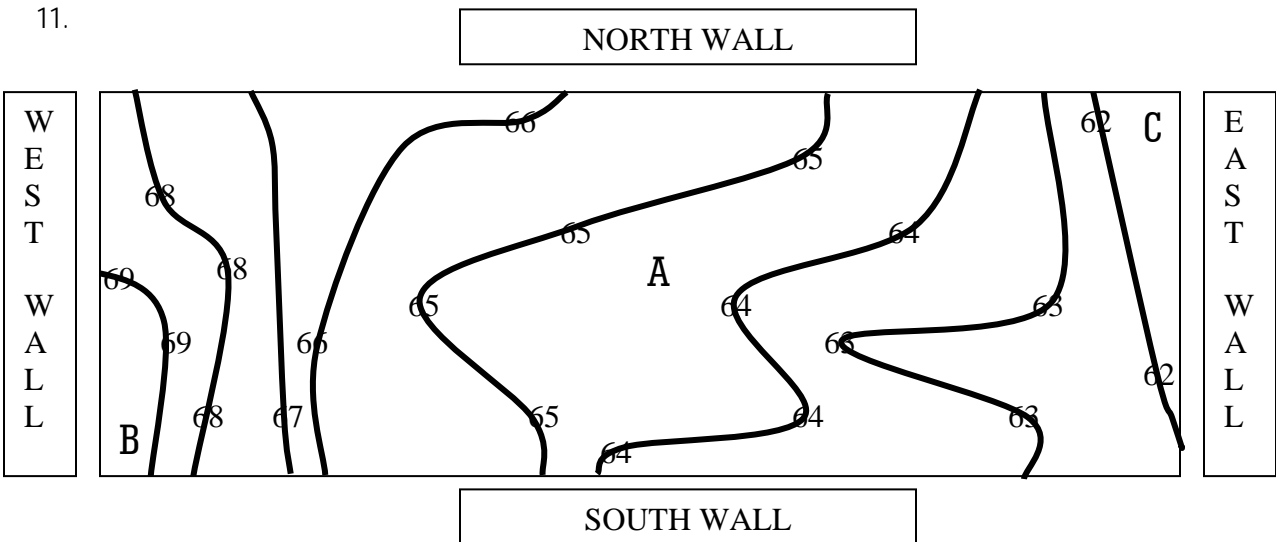   Gradient = change in field value / distance

            = (26 – 20) °C / 3 meters

        =   6°C / 3 meters

        =   2 °C / meter

8. **From point A to point F, the temperature value stays the same.**
   Since both points are on the same line, they have the same value.

9. **Point E** – Point E is the highest temperature out of all the points in the field. According to definition, the source is the hottest area that provides heat to other areas.

10. **(3) point D to point F**
    Heat always flows from higher temperatures (a source) to lower temperatures (a sink).
    Out of the four choices provided, only choice 3 follows this rule.

11.

	NORTH WALL	

W
E
S
T

W
A
L
L

66

68

69   68

69

65

A

65

65

64

B   68   67   65

64

65

64

66

64

64

63

62   C

64

63

63

62

E
A
S
T

W
A
L
L

	SOUTH WALL	

12. **64.5** – It looks like point A is halfway between the 64 and 65 lines.
    (If your lines look a little different, you might have estimated a slightly different answer.)

13. Anything between **61.1 and 61.9** would be acceptable. Letter C is less than 62, but since you don't see a 61 line, you can't get a perfect estimate as to where point C falls between lines.

14. **.6 ºF / meter** (the instructions say to round to nearest tenths place)

    Gradient = change in field value / distance

    $$= (69 – 62) ºF / 12 \text{ meters}$$

    $$= 7ºF / 12 \text{ meters}$$

    $$= .6 ºF / \text{meter}$$