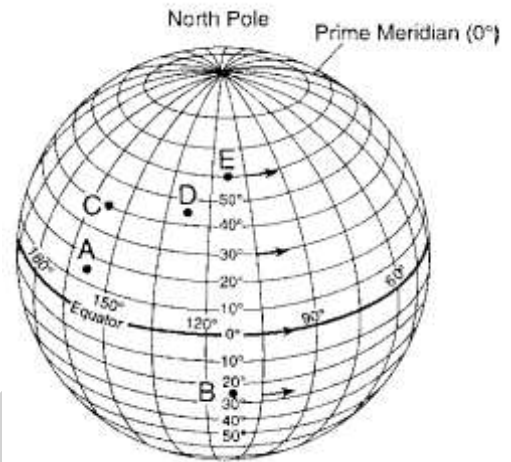


## MODEL OF THE EARTH REVIEW QUESTIONS - SET 2 ANSWERS AND EXPLANATIONS

1. **(4) 15°N, 160°W**

Point A is just slightly above the Equator on the 15°N line. The Prime Meridian is way to the right of the diagram. Therefore, all the points plotted on the globe are in the western hemisphere. (the longitude numbers increase as you move to the left).



2. **(2) 2**

Every 15° longitude equals an hour of time. A is on 157.5°W and D is on 127.5°W. A 30° difference equals 2 hour time difference.

3. **(2) 42° N, 74° 25 W** - Use ESRT page 3 – Slide Mountain is located at 42° 00 N, 74° 25 W.

4. **(3) time** - It's just a fact: longitude lines separate time zones. Cities on the same longitude have the same time.

5. **(1) 42° 06' N, 75° 55' W** - Use ESRT page 3 – Binghamton is located just a little bit above the 42° N line, and a little bit to the right of the 76° W line (this means it is a little less than 76° ... or 75°55' W).

6. **(2) 23½° N latitude** - This is the latitude of the Tropic of Cancer – the answer to this is on ESRT page 4

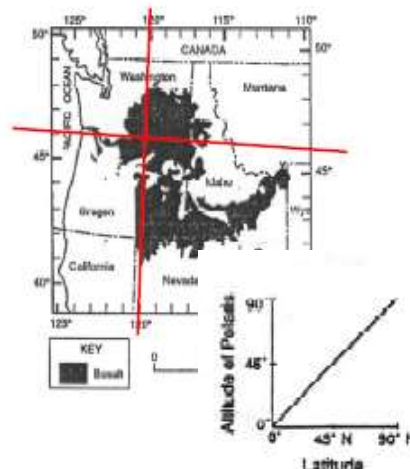
7. **(1) Watertown** - Use ESRT page 3 – Watertown is located closest to the coordinates 44°N, 76°W. You don't even need to worry about minutes on this one ...

8. **(2) increase**

As latitude increases, altitude of Polaris increases. This is the relationship that exists.

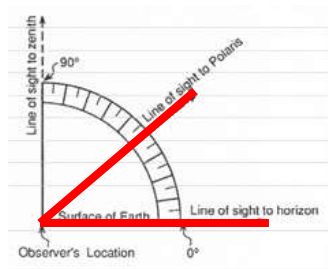
9. **(1) 46°N, 120°W**

Out of all the choices, only choice (1) 46°N, 120°W ends up in the shaded area of basaltic rock.



10. (1) **40°N**

The diagram shows the altitude of Polaris to be 40°. (the highlighted angle shown in the diagram)  
The altitude of Polaris equals the latitude of the observer.



11. (4) **Equator**

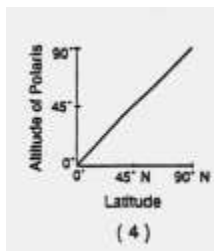
The altitude of Polaris equals the latitude of the observer. If Polaris is viewed to be 0° above the horizon, the observer must be on 0° latitude. This is the Equator.

12. (3) **Each night the altitude of Polaris decreases in the northern sky.**

First, Polaris is always in the northern sky – it is the North Star.  
If a ship is heading south, the ship's latitude would decrease.  
As a result, the observed altitude of Polaris will decrease as well.



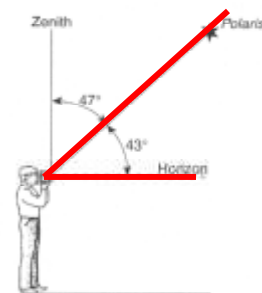
13. (4)



The altitude of Polaris = the latitude of the observer in the Northern Hemisphere  
This is the only graph that correctly shows the relationship between the altitude of Polaris and an observer's latitude.

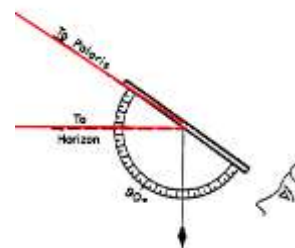
14. (1) **43°N**

Altitude of Polaris = latitude of the observer  
Altitude is the angle of an object above the horizon.  
(the highlighted angle is the altitude of Polaris)  
43° is the measured altitude of Polaris in this diagram, and therefore, this observer's latitude in the northern hemisphere.



15. (1) **35° N**

Altitude of Polaris = latitude of the observer  
This diagram might seem confusing at first, but remember that altitude is the measurement of the angle of an object above the horizon. The only angle that matters in the diagram is the one traced in red.  
Once you figure out that every full tick mark is 10° and each little tick is 5° – you can figure the angle traced out to be 35°.



16. (3) **remain the same**

If one travels due west (or due east) it means that you would be staying on the same latitude line. That means that the altitude of Polaris would also stay the same.