

## 117 Ways to Pass the Earth Science Regents

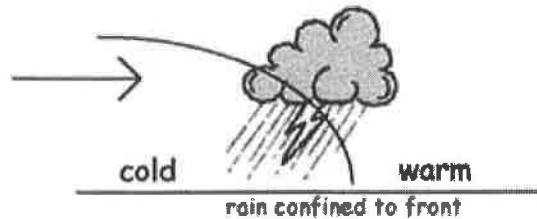
1. The same substance always has the same density
2. As pressure increases, density increases
3. As temperature increases, density decreases
4. Water expands when it freezes
5. Most changes are cyclic
6. Water is most dense at 4°C, when it is a liquid
7. The true shape of the Earth is an Oblate Spheroid, but from space it looks like a sphere.
8. The best model of the Earth is a sphere
9. The altitude of Polaris equals your latitude
10. To determine the earth's circumference, the altitude of the sun is needed at two locations
11. Latitude lines go east-west, just like the equator, but measure distances north or south.
12. Longitude lines go north-south, but measure distances east or west.
13. Longitude is based on observations of the sun
14. Use the reference tables
15. The closer the isolines (contour-isobar-isotherms-) are the steeper the slope or gradient
16. The earth rotates from west to east (24 hours)
17. The earth revolves counterclockwise (365 1/4 days)
18. All celestial objects appear to move west
19. The moon has phases because of the angle at which we view it (remember though that half is always lit)
20. Planets appear to go backwards (retrograde) as the earth passes them in space
21. Summer solstice is June 21st
22. Winter solstice is December 21st
23. Equinoxes: March 21st September 23rd
24. Equator always has 12 hours of day-light
25. The lower the altitude of the sun, the longer the shadow it casts
26. Foucault's pendulum and the coriolis effect prove the earth rotates
27. Earth is closer to the sun in file winter
28. The closer the planet is to the sun the higher it's velocity
31. Black absorbs/white reflects
32. The half-life of a radioactive element can't be changed
33. Ocean crust is thin and made of basalt
34. Continental crust is thick and made of granite
35. Energy moves from source to sink: high to low
36. Mountains form by uplift
37. Chemical weathering occurs mostly in warm, humid climates
38. Physical weathering occurs mostly in cold, humid climates (good for frost wedging)
39. Air moves clockwise and outward around a high
40. Air moves counterclockwise and inward around a low
41. Good absorbers of radiation are good radiators
42. Hottest part of the year is in July
43. Hottest part of the day is after 1:00p.m.
44. As temperature increases, air pressure decreases
45. As moisture increases, pressure decreases
46. Air pressure decreases with altitude
47. Highs are cool and dry; lows are warm and wet
48. Wind is due to air pressure differences
49. Wind blows from high to low pressure
50. Wind is named from the direction that it is coming from
51. The accepted value is the correct answer. The measured value is the guess.

52. The closer the air temperature is to the dew point the greater the chance for precipitation

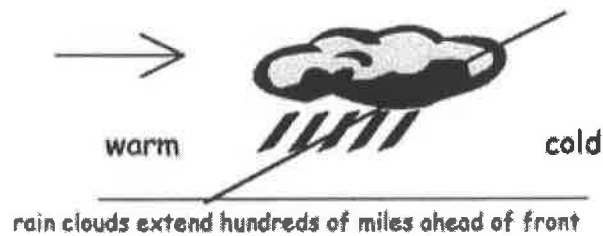
53. Weather moves from west to east in the United States

57. Cold fronts move the fastest

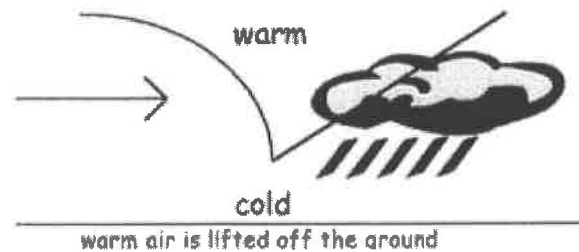
54. Cold Front:



55. Warm Front



56. Occluded Front



58. Porosity does not depend on particle size

59. As particle size increases, permeability increases

60. Capillarity increases when particle size decreases

61. Ep (potential evapotranspiration) depends on temperature

62. Dynamic equilibrium means balance

63. Apparent diameter of objects (sun, moon) gets larger when the object is closer to Earth

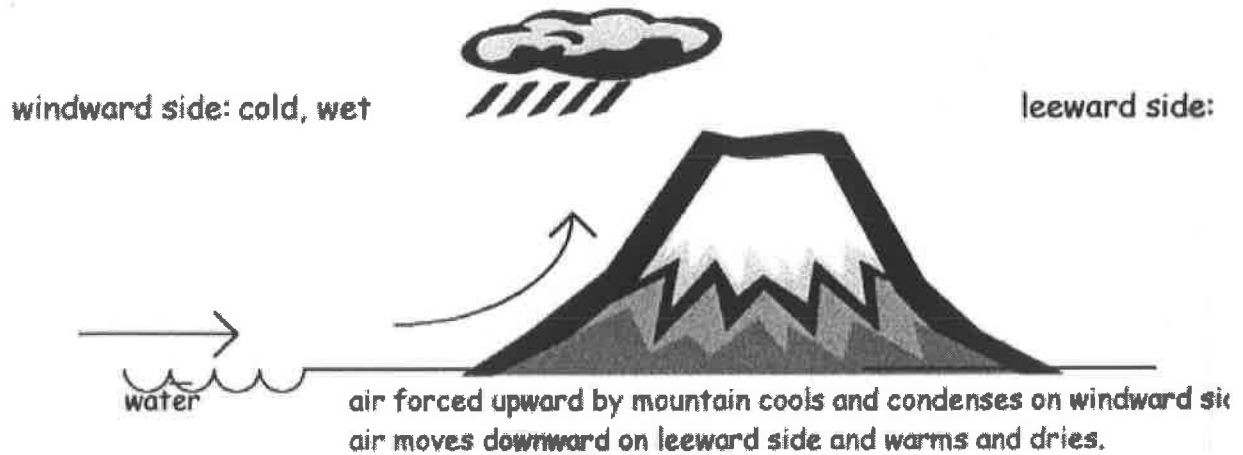
64. Vertical rays (overhead sun) can only occur between  $23\frac{1}{2}^{\circ}\text{N}$  and  $23\frac{1}{2}^{\circ}\text{S}$

65. Index fossils are good time markers (widely spread, lived a short time)

66. Air cools as it rises

67. Water bodies moderate temperature

68. **Expansional cooling:**



69. Gravity causes all erosion
70. Streams are the number one agent of erosion
71. Stream velocity depends on slope and discharge
72. Velocity is fastest on the out side of meander bend
73. Heavy, round and dense particle settle out first Graded
74. Bedding (vertical sorting): biggest sentiments are on bottom
75. Glacial sentiments are unsorted, scratched, U shaped valley
76. Sedimentary rocks - strata - flat layers - most likely to have fossils
77. Igneous rock: cools fast: small crystals ; cools slow: large crystals
78. Metamorphic- banded-distorted structure
79. Mineral properties depend on internal atomic arrangement
80. Silicon + oxygen = tetrahedron
81. Isostasy: earth's crust in equilibrium
82. Mid-ocean ridge - new earth being created-sea floor spreading
83. Trenches - earth being destroyed-subduction zone
84. P waves are faster than S waves
85. P waves - solids & liquids can pass through -- S waves solids only
86. You need 3 seismometer stations to plot earthquake
87. Undisturbed strata - bottom layer is oldest
88. Intrusion and faults are younger than the rock they are in
89. Unconformity means erosion
90. Arid landscape: steep slopes with sharp angles
91. Humid landscape: smooth with rounded slopes
92. When in doubt, see if the reference tables will help
93. Uranium <sup>235</sup> dates old rocks
94. Carbon <sup>14</sup> dates recent living objects
95. Convection currents in the mantle move plates
96. Always try to eliminate two answers
97. When a rock is broken into smaller pieces, surface area increases and weathering rate increases
98. Use complete sentences for the free responses

99. Be familiar with this chart:

DATE (APPROXIMATE)	LATITUDE OF SUN'S DIRECT RAYS	DIRECTION OF SUNRISE AND SUNSET	ALTITUDE OF NOON SUN	LENGTH OF DAYLIGHT
Sept. 23 (Autumnal Equinox)	Equator (0°)	Rises due East Sets due West	48°	12 hours
December 21 (Winter Solstice)	Tropic of Capricorn (23 1/2°S)	Rises in SE Sets in SW	24.5° (lowest)	8 hours (shortest day)
March 21 (Vernal Equinox)	Equator (0°)	Rises due East Sets due West	48°	12 hours
June 21 (Summer Solstice)	Tropic of Cancer (23 1/2°N)	Rises in NE Sets in NW	71.5° (highest)	16 hours (longest day)

**HINTS FOR TAKING THE REGENTS EXAM AND DOING BETTER**

**100. USE THE REFERENCE TABLES!**

101. Relax--You've already completed 1/4 of the exam.
102. In part II, choose groups A and B (rocks & minerals, and plate tectonics)
103. Take your time. You have three hours to do the exam
104. Read introductory paragraphs and study diagrams before looking at questions. Underline key words.
105. Draw diagrams to help you visualize the questions asked - where possible
106. Use a straight-edge to read graphics, to mark points on a graph and to measure distances.
107. If certain words cause confusion, cross them out and substitute a different word, then read the question again. (example: substitute the word "false" for "not true")
108. Don't leave any questions blank
109. Read all choices before deciding on an answer, sometimes a question has a good and a better answer. Always choose the best answer.
110. If you are not sure of an answer, try to eliminate choices that you think are clearly wrong and narrow down your choices. Then make your most careful guess.
111. Ask yourself: Is it in the reference tables, or can the reference tables help me?
112. Check your test a second time, but only change an answer if you find an obvious mistake. Your first choice is usually correct.
113. Look up formulas, even if you think you know them. Substitute information from the question into the formula. Most are on the back page of the reference tables.
114. Skip over hard questions that are stumping you. Go back to them later. Something else in the test may give you a clue to the harder problems.
115. Have a healthy meal for dinner the night before. Eat veggies if possible.
116. A good night sleep is as important as the above 112 items.
117. Relax-you've seen all this stuff before.