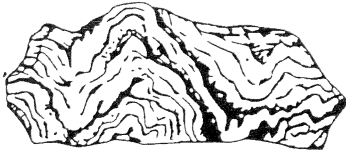


# Metamorphic Review

Name: \_\_\_\_\_

Date: \_\_\_\_\_ Period: \_\_\_\_\_

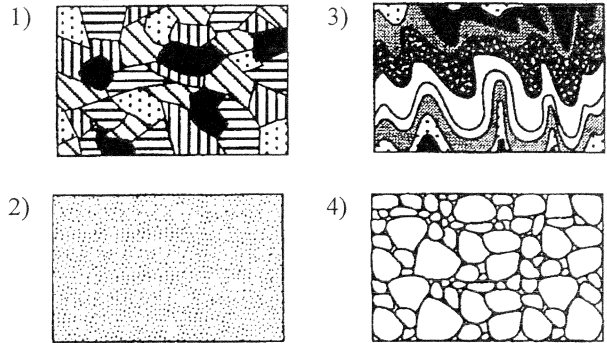
- Which rock is only formed by regional metamorphism?
  - slate
  - hornfels
  - dunite
  - marble
- Wavy bands of light and dark minerals visible in gneiss bedrock probably formed from the
  - cementing together of individual miner grains
  - cooling and crystallization of magma
  - evaporation of an ancient ocean
  - heat and pressure during metamorphism
- The rock shown below has a foliated texture and contains the minerals amphibole, quartz, and feldspar arranged in coarse-grained bands.



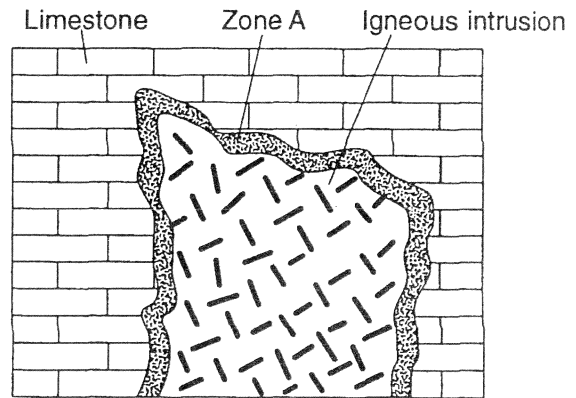
Which rock is shown?

- slate
  - dunite
  - gneiss
  - quartzite
- Which physical characteristic best describes the rock phyllite?
    - glassy texture with gas pockets
    - clastic texture with angular fragments
    - bioclastic texture with cemented shell fragments
    - foliated texture with microscopic mica crystals
  - Which nonfoliated rock forms only in a zone of contact metamorphism?
    - conglomerate
    - hornfels
    - pegmatite
    - quartzite
  - Which rock is foliated, shows mineral alignment but not banding, and contains medium-sized grains of quartz and pyroxene?
    - phyllite
    - schist
    - gneiss
    - quartzite
  - Which two kinds of adjoining bedrock would most likely have a zone of contact metamorphism between them?
    - shale and conglomerate
    - shale and sandstone
    - limestone and sandstone
    - limestone and granite
  - Which sequence of change in rock type occurs as shale is subjected to increasing heat and pressure?
    - shale → schist → phyllite → slate → gneiss
    - shale → slate → phyllite → schist → gneiss
    - shale → gneiss → phyllite → slate → schist
    - shale → gneiss → phyllite → schist → slate

- How do the metamorphic rocks schist and quartzite differ?
  - Quartzite contains the mineral quartz and schist does not.
  - Quartzite forms from regional metamorphism and schist does not.
  - Schist is organically formed and quartzite is not.
  - Schist is foliated and quartzite is not.
- The recrystallization of unmelted material under high temperature and pressure results in
  - metamorphic rock
  - sedimentary rock
  - igneous rock
  - volcanic rock
- Which diagram best represents a sample of the metamorphic rock gneiss? (Diagrams show actual size.)



- The geologic cross section below shows limestone that was intruded. Part of the limestone (zone A) was heated intensely but was not melted.



Which type of rock most likely formed in zone A?

- gneiss
  - slate
  - marble
  - obsidian
- Heat and pressure due to magma intrusions may result in
    - vertical sorting
    - graded bedding
    - contact metamorphism
    - chemical evaporites

# Metamorphic Review

14. Which processes change sedimentary rocks into metamorphic rocks?
- 1) erosion and deposition
  - 2) melting and solidification
  - 3) evaporation and condensation
  - 4) temperature and pressure changes

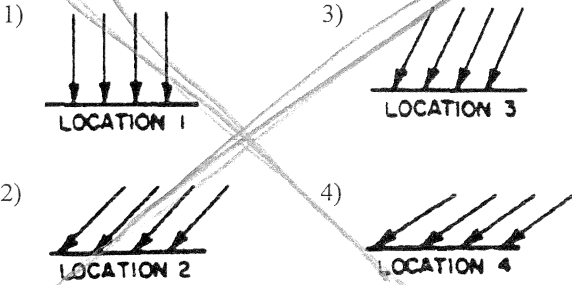
15. Which metamorphic rock will have visible mica crystals and a foliated texture?

- |              |           |
|--------------|-----------|
| 1) marble    | 3) schist |
| 2) quartzite | 4) slate  |

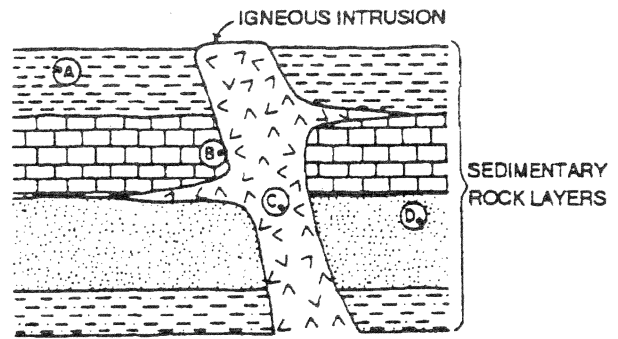
16. Most metamorphic rocks are formed when

- 1) sediments are cemented and compacted
- 2) magma cools slowly, deep underground
- 3) flows of lava cool rapidly
- 4) rocks are subjected to heat and pressure

17. In which diagram would the incoming solar radiation reaching Earth's surface heat the ground the most?



18. The diagram below shows an igneous rock intrusion in sedimentary rock layers.



At which point would metamorphic rock most likely be found?

- |      |      |
|------|------|
| 1) A | 3) C |
| 2) B | 4) D |

19. Metamorphic rocks form as the direct result of

- 1) precipitation from evaporating water
- 2) melting and solidification in magma
- 3) erosion and deposition of soil particles
- 4) heat and pressure causing changes in existing rock

20. Which characteristic of rocks tends to increase as the rocks are metamorphosed?

- |             |                              |
|-------------|------------------------------|
| 1) density  | 3) permeability              |
| 2) porosity | 4) number of fossils present |