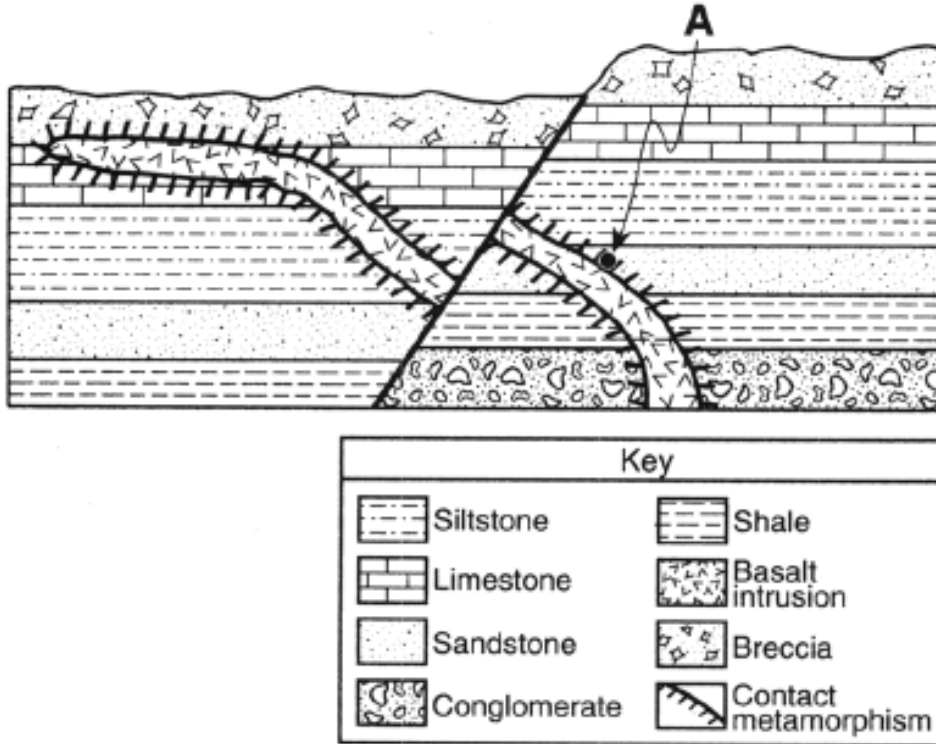


RM6 JRQ

Name \_\_\_\_\_

1. Base your answer on the accompanying geologic cross section. The rock layers have not been overturned. Point A is located in the zone of contact metamorphism.

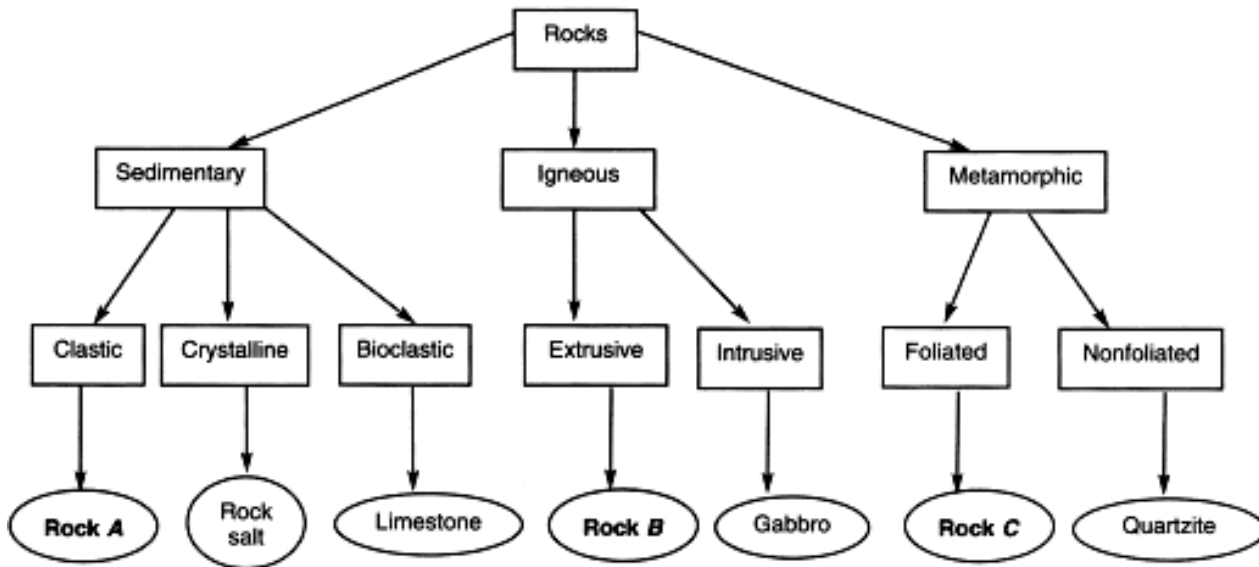
What is the largest silt particle (in **cm**) that could be found in the siltstone layer?



2. Base your answer on the Rock Classification flowchart shown below. Letters A, B, and C represent specific rocks in this classification scheme.

Rock A is composed of very fine-grained quartz and feldspar particles 0.005 centimeter in diameter. State the name of rock A. [1]

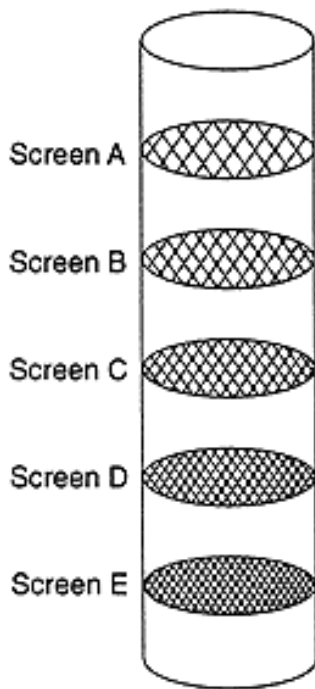
### Rock Classification Flowchart



3. Base your answer on the information below and the diagram and data table shown.

To sort a quartz sediment sample by particle size, a student shook the sample through a column containing screens *A* through *E*. The mesh of the screens (the open spaces between the wires) had different-sized openings, as represented by the diagram. The results of the sorting are given in the student's data table.

Which clastic sedimentary rock may be formed from particles of the same size as this quartz sediment sample?  
[1]



(Screen mesh not drawn to scale)

**Student Data Table**

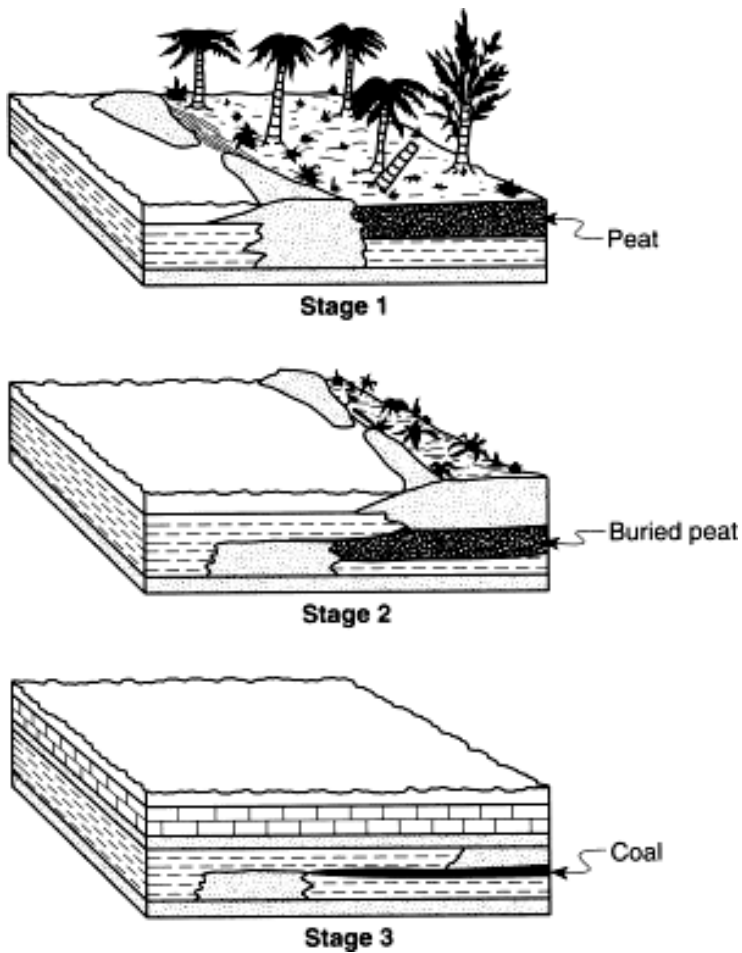
| Screen | Screen Mesh Opening Size (cm) | Percentage of Particles Trapped by the Screen (%) |
|--------|-------------------------------|---------------------------------------------------|
| A      | 0.1                           | 0                                                 |
| B      | 0.05                          | 30                                                |
| C      | 0.025                         | 45                                                |
| D      | 0.0125                        | 15                                                |
| E      | 0.00625                       | 10                                                |

4. Record your answer on a separate piece of paper.

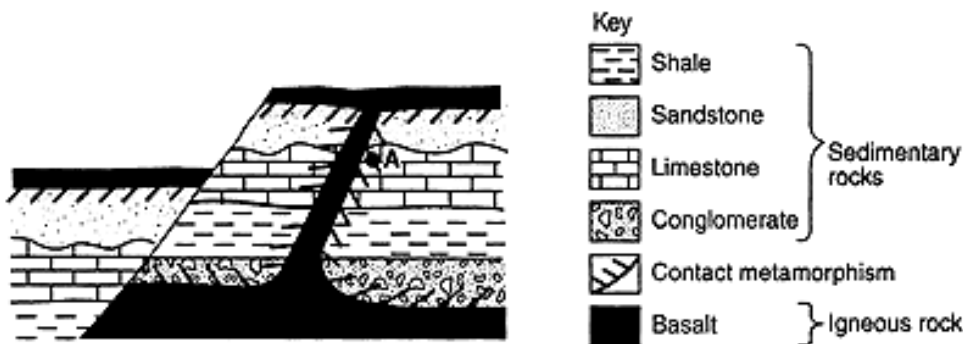
The sequence of diagrams (see image) shows how coal is formed. Describe the material and *two* processes involved in the formation of coal. [2]

Material: \_\_\_\_\_

Processes: \_\_\_\_\_ and \_\_\_\_\_



5. Base your answer on the accompanying diagram. The diagram shows a cross section of a portion of Earth's crust that has undergone geological processes. Overturning of rock layers has not occurred. Point A represents one location of metamorphic rock. State the name of the inorganic sedimentary rock shown in the cross section that is composed of sediment with the greatest range in particle size.



6. Which process most likely formed a layer of the sedimentary rock, gypsum?

1. precipitation from seawater

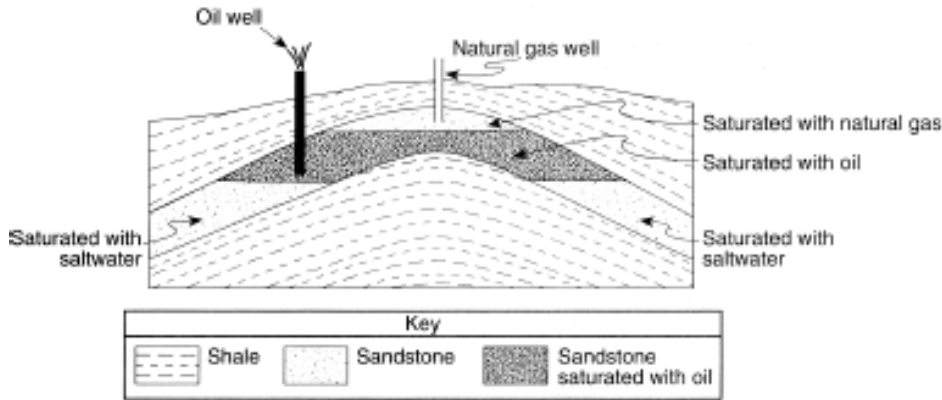
3. folding of clay-sized particles

2. solidification of magma

4. melting of sand-sized particles

7. Base your answer on the cross section (see image). The cross section shows a typical bedrock structure where oil and natural gas deposits are found.

According to the diagram, in which type of rock are these natural gas and oil deposits found?



1. coarse-textured igneous rock

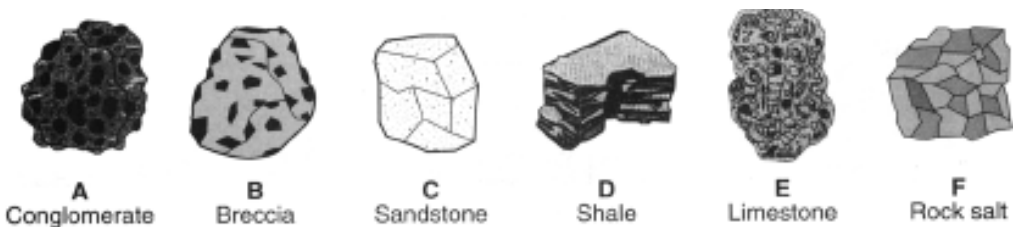
3. porous clastic sedimentary rock

2. foliated metamorphic rock

4. intrusive crystalline sedimentary rock

8. Base your answer on the accompanying drawings of six sedimentary rocks labeled A through F.

Which table shows the rocks correctly classified by texture?



|                |            |            |             |
|----------------|------------|------------|-------------|
| <b>Texture</b> | clastic    | bioclastic | crystalline |
| <b>Rock</b>    | A, B, C, D | E          | F           |

(1)

|                |         |            |             |
|----------------|---------|------------|-------------|
| <b>Texture</b> | clastic | bioclastic | crystalline |
| <b>Rock</b>    | A, B, C | D          | E, F        |

(2)

|                |         |            |             |
|----------------|---------|------------|-------------|
| <b>Texture</b> | clastic | bioclastic | crystalline |
| <b>Rock</b>    | A, C    | B, E       | D, F        |

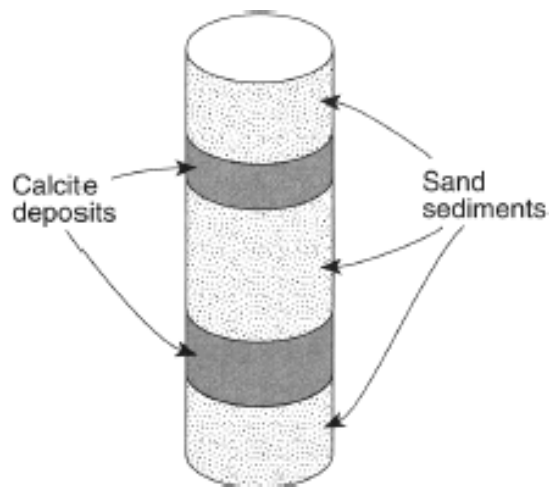
(3)

|                |         |            |             |
|----------------|---------|------------|-------------|
| <b>Texture</b> | clastic | bioclastic | crystalline |
| <b>Rock</b>    | A, B, F | E          | C, D        |

(4)

9. The accompanying diagram shows a drill core of sediment that was taken from the bottom of a lake.

Which types of rock would most likely form from compaction and cementation of these sediments?



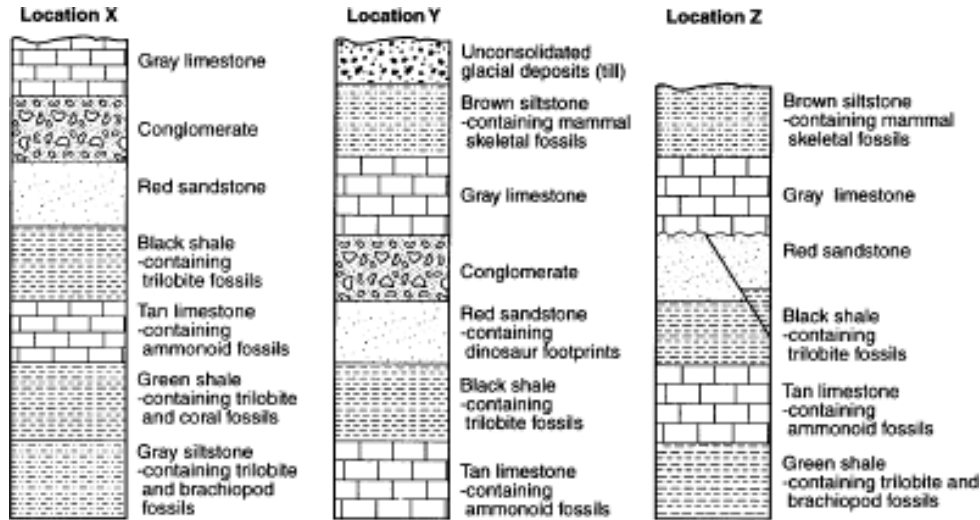
1. sandstone and limestone

2. shale and coal

3. breccia and rock salt

4. conglomerate and siltstone

10. Base your answer on the accompanying cross sections, which show widely separated outcrops at locations X, Y, and Z. Which rock layer was formed by the compaction and cementation of particles that were all less than 0.0004 centimeter in diameter?



1. red sandstone

2. green shale

3. brown siltstone

4. conglomerate

11. A student obtains a cup of quartz sand from a beach. A saltwater solution is poured into the sand and allowed to evaporate. The mineral residue from the saltwater solution cements the sand grains together, forming a material that is most similar in origin to

1. an extrusive igneous rock

2. an intrusive igneous rock

3. a clastic sedimentary rock

4. a foliated metamorphic rock