Anemia

1. Describe how you can use laboratory tests and blood smear findings to tell if an anemia is hemolytic.
2. Be able to fill out this table. I'll start you out with the first one.

Type of anemia	Cause	Mechanism	Blood smear findings
Microangiopathic hemolytic anemia	Malignancy, OB complications, sepsis, trauma	Physical trauma to red cells	Schistocytes
Cold autoimmune hemolytic anemia			
Sickle cell anemia			
Hereditary spherocytosis			
Megaloblastic anemia			
G6PD deficiency			

Benign Leukocytoses

1. Know what toxic changes in neutrophils look like, and what causes them.
2. List the causes of mature and immature neutrophilia
3. List the causes of mature and reactive lymphocytosis
4. List the causes of eosinophilia

Acute Leukemia

1. Describe the typical presentation of acute leukemia.
2. Describe what Auer rods look like, and know what type of leukemia they occur in.
3. Know which leukemia has this requirement: at least 20% of the nucleated cells (in blood or bone marrow) must be blasts.
4. Know which type of leukemia most commonly occurs in children.

Chronic Leukemia

1. Describe the morphology and immunophenotype of the malignant cells in chronic lymphocytic leukemia.
2. Describe the morphologic findings, characteristic chromosomal translocation, and standard treatment for chronic myeloid leukemia.
3. Describe the clinical features and morphologic findings (in both bone marrow and blood) of chronic myelofibrosis.

Lymphoma

1. Be able to fill out this table. I'll start you off with the first one.

Type of lymphoma	Clinical features	Morphologic findings	Relative Prognosis
Burkitt	Young patient, rapidly-growing mass	Starry-sky pattern	Not great (aggressive)
MALT			
Mycosis fungoides/Sézary syndrome			
Hodgkin			

Myeloma

1. Identify the malignant cell in myeloma, and describe where these malignant cells proliferate in the body (bone marrow? Lymph nodes? Blood?)
2. Describe what an M spike is, and explain what happens to normal immunoglobulin levels in myeloma.
3. Explain what rouleaux is and why it happens in myeloma.
4. Describe the typical prognosis for patients with myeloma.

Hemostasis

1. List the three steps that are involved in making a blood clot.
2. Describe the way the coagulation cascade is initiated *in vivo* (in the body)
3. Know the factors involved in the intrinsic and extrinsic pathways.
4. Describe what cofactors V and VIII do.
5. Describe the two main ways the body keeps clotting under control.
6. Describe what the PT (INR), PTT, and bleeding time tell you (in other words, what does each test evaluate?).

Bleeding and Thrombotic Disorders

1. Compare and contrast "factor" and "platelet" bleeding.
2. Be able to fill out this table. I'll start you off with the first one.

Disorder	Cause	Mechanism	Clinical findings	PT (INR)	PTT	Bleeding time
Hemophilia A	F VIII gene mutation (most cases X-linked recessive)	Lack of F VIII causes bleeding	Deep-joint bleeding	Normal	Increased	Normal
Von Willebrand Disease						
DIC						
TTP						
Factor V Leiden						