

Jeopardy
start



JEOPARDY!

Radiation & Radioactivity

Nuclear Power Plants

Half Life

Ionizing & Nonionizing

Fission & Fusion

Vocabulary

Radiation &
Radioactivity

Nuclear
Power Plants

Half Life

Ionizing &
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Fission &
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Vocabulary

\$100

\$100

\$100

\$100

\$100

\$100

\$200

\$200

\$200

\$200

\$200

\$200

\$300

\$300

\$300

\$300

\$300

\$300

\$400

\$400

\$400

\$400

\$400

\$400

\$500

\$500

\$500

\$500

\$500

\$500



1-100
1-100

The most
penetrating
type of
radiation.

\$100

I-100
I-100A

What is
gamma
radiation?

\$100

Return

The size and charge
of an alpha particle.

\$200

I-100
I-200A

What are 4 amu and
+ 2?

\$200

Return

The noble gas that
accounts for much of
the background
radiation that humans
receive.

\$300

1-100
1-300A

What is Radon?

\$300

Return

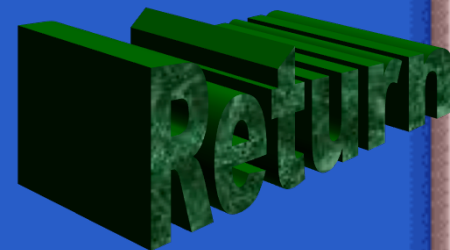
The difference between
radiation and
radioactivity.

\$400

I-100
I-400A

What is the actual particles or energy that are emitted are radiation and the process by which this occurs is radioactivity?

\$400



1-500

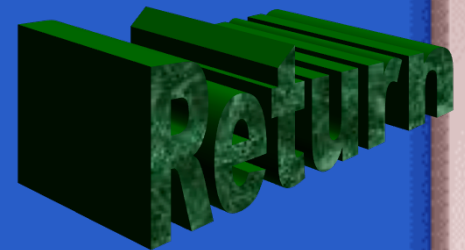
Unit(s) for
measuring
radioactivity.

\$500

I-100
I-500A

What are any of the
following: rem,
mrem, gray sievert
and/or rad?

\$500



1-100
2-100

The specific type of element used as the fuel in fuel rods of a typical nuclear power plant.

\$100

1-100
2-100A

What is U-235?

\$100

Return

The result of an uncontrolled chain reaction in a nuclear power plant (like at Chernobyl).

\$200

1-100
2-200A

What is a meltdown?

\$200

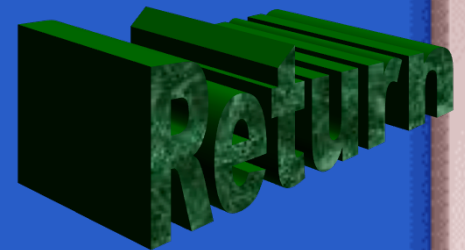
Return

The function of
control rods within a
nuclear reactor.

\$300

1-100
2-300A

What is to absorb
neutrons and thus,
manage the rate of
fission?



\$300

The chemical composition of the white smoke that is emitted from the cooling tower of a nuclear power plant.

\$400

1-100
2-400A

What is H_2O (water)?

\$400

Return

The actual useful energy
(in the form of
electricity) is produced
by this part of the
nuclear power plant.

\$500

1-100
2-500A

What is a generator?

\$500

Return

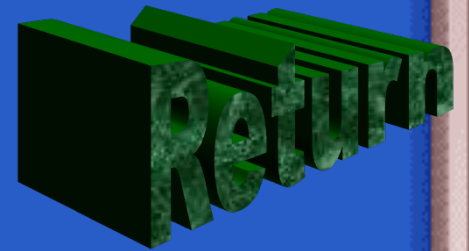
1-100
3-100

The definition of half life.

\$100

1-100
3-100A

What is the amount
of time required for
half of a sample to
decay?



\$100

If the half life a given element is 1 hour, and 100 g decay for 3 hours, this is the mass (g) that remains.

\$200

1-100
3-200A

What are 12.5 g?

\$200

Return

How many half lives
must pass if a sample
begins with 60 grams
and finishes with
3.75 grams?

\$300

1-100
3-300A

What are four half
lives?

\$300

Return

How long will it take a given sample to reach $1/8^{\text{th}}$ of the original activity if the half life is 20 minutes?

\$400

1-100
3-400A

What is 1 hour or
60 minutes?

\$400

Return

How much of a medical radioisotope tracer must be made at 7 AM if a procedure will occur at 11 AM requires 9 mg and the half life is 2 hours?

\$500

1-100
3-500A

What are 36 mg?

\$500

Return

1-100
4-100

Damages molecules
by removing
electrons (thus
creating ions).

\$100

1-100
4-100A

What is ionizing radiation?

\$100

Return

Causes atoms to
vibrate.

\$200

1-100
4-200A

What is nonionizing radiation?

\$200

Return

Microwaves are
considered this.

.

\$300

1-100
4-300A

What are nonionizing radiation?

\$300

Return

Gamma radiation
falls under this
heading.

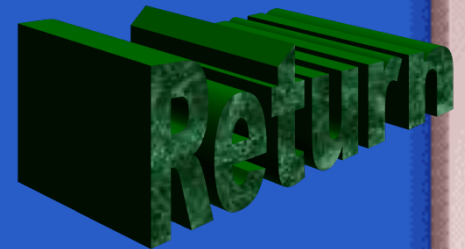
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\$400

1-100
4-400A

What is ionizing radiation?

\$400



A portion of this part of the electromagnetic spectrum is considered ionizing while the rest of this part is considered nonionizing.

\$500

1-100
4-500A

What is UV light
(ultraviolet)?

\$500

Return

1-100
5-100

When a large nucleus
decays into several
smaller nuclei.

\$100

1-100
5-100A

What is fission?

\$100

Return

When two or more
smaller nuclei
combine.

\$200

1-100
5-200A

What is fusion?

\$200

Return

Used in nuclear
power plants to create
useful energy.

\$300

1-100
5-300A

What is fission?

\$300

Return

5-400

Occurs in stars.

\$400

1-100
5-400A

What is fusion?

\$400

Return

5-500
Experts believe that
this form of nuclear
reaction could be
used to power nuclear
power plants of the
future.

\$500

1 - 100
5-500A

What is fusion?

\$500

Return

1-100
6-100

High speed electron
emitted from the
nucleus during a
nuclear reaction.

\$100

1-100
6-100A

What is a beta
particle?

\$100

Return

The part of the atom
that contains the
neutrons and protons.

\$200

1 - 100
6-200A

What is the nucleus?

\$200

Return

The mass needed for a
nuclear chain reaction.

\$300

1 - 100
6-300A

What is critical mass?

\$300

Return

6-400

The device that
contains a nuclear
reaction.

\$400

1 - 100
6-400A

What is a nuclear
reactor?

\$400

Return

Spins within a
nuclear power plant
because of kinetic
energy from steam.

\$500

1 - 100
6-500A

What is a turbine?

\$500

Return

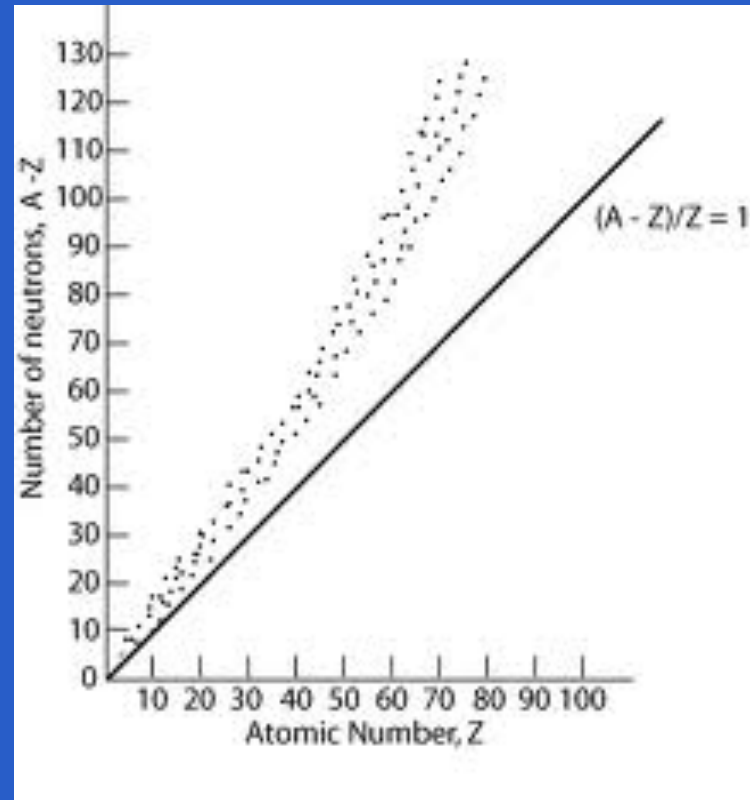


Final
Jeopardy

Category

Use the belt of stability graph to determine if a nucleus with 50 protons and 50 neutrons is likely to be radioactive or likely to be stable.

BELT OF STABILITY



Justify your choice.



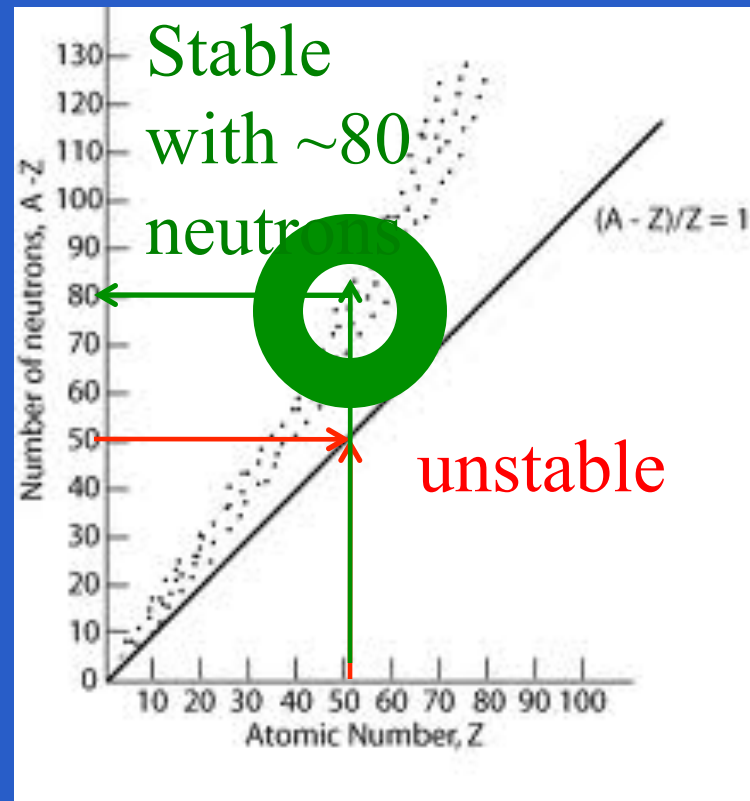
Contestants:

**Please put down your
writing tools and
wait for further
instructions.**



Since this is a reasonably large nucleus, it should have a ratio of neutrons to protons that is above 1:1. 50 neutrons and 50 protons reduces to a 1:1 ratio, so this nucleus would fall below the belt of stability on the graph.

BELT OF STABILITY

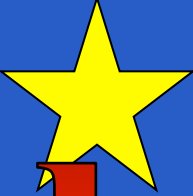


**That's all
for today.**

**Good luck on
your test!**

Daily Double Round 1

  **Daily** 

 **Double!!!**

