

IT'S ABOUT TIME

Name _____

Date _____

Grade 9 10 11 12

I am trying out for Math-2 (TIME/ASTR) Math-3 (TIME/WIDI)

I did this event last year

Scoring	/11	/20	/21	/25	TOTAL	/77
----------------	-----	-----	-----	-----	-------	-----

Answer all questions as completely as possible. No half-points will be awarded, but no points will be deducted for incorrect answers. Include units for all measurements; any numbers without units will be marked as wrong. Point values are listed to the right of each question.

What concept is discussed in the following quote, and who is quoted? [2]
“... in its own nature, without regard to anything external, remains always similar and immovable”

Explain the circular nature of time, and give an operation definition for time. [3]

What is the international unit of time and how is it defined? [2]

What common idiom gives time economic value? [1]

What is the science of the measurement of time or timekeeping called? [1]

What is horology? [1]

How many days did the earliest calendars have? [1]

Why has the number 13, in relation to timekeeping, become important in many cultures? [2]

Who introduced the Roman world to the solar calendar? [1]

What was the motivation behind introducing the Gregorian calendar? Specifically, what were the changes in the Gregorian calendar? [4]

What is unique about the unit attosecond? [1]

How many days are a sennight? [1]

What does the Plank time unit measure, and how many seconds is it? [2]

What unit of time is used by legislatures? [1]

How long is a galactic year, and how is it defined? What event happened about 61 galactic years ago? [3]

What is a motivation behind daylight saving time (DST)? What are two criticisms of the practice? [5]

Would 2600 C.E. be a leap year? Why?

[2]

A fast-moving object would be seen as slower in time from a stationary observer's point of view. What is this effect called?

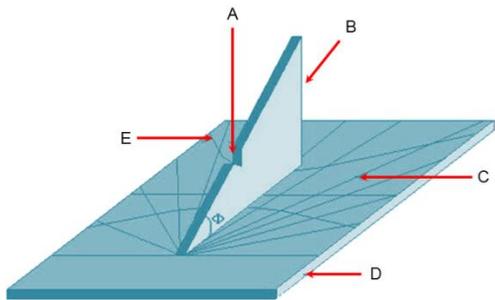
[1]

Describe two common problems with anchor escapement.

[6]

Label the diagram of a sundial using correct terminology.

[5]



- a.
- b.
- c.
- d.
- e.

How do clocks use the piezoelectric effect? What makes it possible for a quartz crystal to be used?

[3]

A horizontal massless spring with spring constant 10.0 N/m is attached to a mass of 3.00 kg. What is the period? What is the period if the spring is vertical?

[4]

Design and document a timekeeping device that can measure time intervals between 10 and 300 seconds to the nearest 0.1 second. You must explain how your device is used to measure time and how it is superior to other designs you may have considered. Any diagrams must be labeled and drawn somewhat to scale, and all materials used must be permitted by the rules.

[25]