

1 Which of the following is always correct, regarding three points?

- a They are on a line.
 - b They are on a plane.
 - c The distance between each two of them is the same.
 - d None of the above.
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2 The radius of the orbit of Mars is larger than that of the earth. Which of the following would **never** occur?

- a Mars being on a line segment between the sun and the earth
 - b the sun being on a line segment between Mars and the earth
 - c the earth being on a line segment between the sun and Mars
 - d the sun, the earth, and Mars making a triangle
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3 The sun looks very much brighter than the star Sirius. The reason is that

- a the sun is nearer
 - b the sun radiates more power than Sirius
 - c the sun has a planetary system
 - d none of the above
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4 A piece of ice doesn't sink in liquid water. Denoting the density of liquid water by ρ_w and that of ice by ρ_i , which is correct?

- a $0 = \rho_i < \rho_w$
 - b $0 \neq \rho_i < \rho_w$
 - c $\rho_i = \rho_w$
 - d $\rho_i > \rho_w$
-

5 A parsec is the distance at which the angular separation of the sun and the earth is one arc-second. The parsec is the unit for

- a angle
 - b length
 - c area
 - d time
-

6 The manual power a human is 100 W. The typical output of a power plant is 1 G W. Regarding the energy, how many people are equivalent to a power plant?

- a 10^4
- b 10^7
- c 10^{10}
- d 10^{13}

7 The power a human needs to survive only, is 100 W. The energy content of sugar is 17 MJ (kg)^{-1} . How much sugar is needed, for the survival of a human being for one day?

- a** 50 g **b** 500 g **c** 5 kg **d** 50 kg
-

8 A test charge of charge q and mass m is in an electric field. Its acceleration is measured to be a . That charge is substituted by another, of the same charge but the mass ($2m$). What is the acceleration of the second test charge in the same field?

- a** $(0.5a)$ **b** a **c** $(2a)$ **d** $(4a)$
-

9 The square root of 2 is

- a** integer **b** irrational **c** non real **d** none of the above
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10 Which of the following has the largest molar fraction in the earth's atmosphere?

- a** carbon dioxide **b** argon **c** water vapor **d** nitrogen
-

11 The pound is a unit of mass, equal to 454 g. A long ton is another unit of mass, approximately equal to 10^3 kg. How many pounds is a long ton?

- a** 1000 **b** 2000 **c** 2200 **d** 4500
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12 The Pythagoras theorem states that in a right-angled triangle the square of the hypotenuse is equal to the sum of the squares of the other sides of the triangle. In a right-angled triangle, the length of the two sides which are not hypotenuse are 5 and 12 units. How many square units is the surface area of the triangle?

- a** 7 **b** 13 **c** 17 **d** 30
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13 Good luck!

English for special purposes, the final exam 1396/10/27

Please mark the correct answers in the answer sheet (the table below) and return it.

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Student number: 0

	a	b	c	d
1		■		
2	■			
3	■			
4		■		
5		■		
6		■		
7		■		
8	■			
9		■		
10				■
11			■	
12				■