

AP PHYSICS

Name: _____

Period: _____ Date: _____

Points: 53 Score: _____ IB Curve: _____


DEVIL PHYSICS
BADDEST CLASS ON CAMPUS

AP EXAM		CHAPTER TEST	
50 Multiple Choice • 45 Single Response • 5 Multi-Response	90 min, 1 point each	25 Multiple Choice • 22 Single Response • 3 Multi-Response	45 min
Free Response • 3 Short Free Response • 2 Long Free Response	90 min • 13 min ea, 7 pts ea • 25 min ea, 12 pts ea	Free Response • 2 Short Free Response • 1 Long Free Response	45 min • 12 min ea, 7 pts ea • 20 min ea, 12 pts ea

CHAPTER 1 TEST REVIEW

MULTIPLE CHOICE

1. (___/1) Four students measure the mass of an object, each using a different scale. They record their results as follows:

Student	A	B	C	D
Mass (g)	27.2	27.21	30	27

Which student used the least precise scale?

- A
 - B
 - C
 - D
 - E
2. (___/1) All of the following are base units of the SI system EXCEPT:
- Kilogram
 - Kelvin
 - Meter
 - Volt
 - Candela
3. (___/1) How many basic units does the SI system have?
- Three
 - Four
 - Five
 - Seven
 - Ten
4. (___/1) The metric prefix for one thousand is
- Milli
 - Centi
 - Mega
 - Kilo
 - Micro
5. (___/1) Express the number 0.02 days using a metric prefix.
- 2 decadays
 - 2 centadays
 - 2 hectadays
 - 2 milladays
 - 2 microdays
6. (___/1) What is the conversion factor between km/hr^2 and m/s^2 ?
- $7.72 \times 10^{-6} \text{ m/s}^2$
 - $2.78 \times 10^{-1} \text{ m/s}^2$
 - $1.30 \times 10^4 \text{ m/s}^2$
 - 3.60 m/s^2
 - $1.30 \times 10^{-4} \text{ m/s}^2$
7. (___/1) The position x , of an object is given by the equation $x = A + Bt + Ct^2$ where t refers to time. What are the dimensions of A, B, and C?
- Distance, distance, distance
 - Distance, time, time^2
 - Distance, distance/time, distance/ time^2
 - distance/time, distance/ time^2 , distance/ time^3

8. (___/1) What is the percent uncertainty in the measurement $7.63 \pm 0.13\text{cm}$
- 0.017%
 - 1.7%
 - 0.99%
 - 99%
 - 59%
9. (___/1) What is the volume, and its approximate uncertainty, of a sphere of radius $5.46 \pm 0.03\text{m}$?
- $375 \pm 0.09 \text{ m}$
 - $384 \pm 0.27 \text{ m}$
 - $70.2 \pm 0.55 \text{ m}$
 - $125 \pm 1.6 \text{ m}$
 - $682 \pm 10 \text{ m}^3$
10. (___/1) The number of significant figures in 0.040 is
- One
 - Two
 - Three
 - Four
11. (___/1) Use the rules for significant figures to find the difference between 117.3 and 108.57.
- 9
 - 8.7
 - 8.73
 - 8.730
 - 8.7300
12. (___/1) Use the rules for significant figures to find the area of a rectangle that is 3.25m long and 1.5m wide.
- 4.875 m^2
 - 4.87 m^2
 - 4.80 m^2
 - 4.9 m^2
 - 5 m^2
13. (___/1) Use the rules for significant figures to find the diagonal of a garden measuring 15 m by 13.7 m.
- 5.4 m
 - 19 m
 - 20 m
 - 29 m
14. (___/1) Write the number 4567.89 in proper scientific notation.
- 456789×10^{-2}
 - 4.56789×10^{-3}
 - 4.56789×10^3
 - 4568
 - 4567.89×10^0
15. (___/1) 0.00001942 can also be expressed as,
- 1.942×10^{-5}
 - 19.42×10^4
 - 1.942×10^{-4}
 - 1942×10^8
 - 1.9×10^{-5}
16. (___/1) A measurement of 0.00045 meters can be expressed by what number of centimeters? *Use the rules for proper scientific notation and significant figures.*
- $4.5 \times 10^{-2} \text{ cm}$
 - $4.50 \times 10^{-2} \text{ cm}$
 - $4.50 \times 10^{-4} \text{ cm}$
 - $4.50 \times 10^4 \text{ cm}$
 - 0.0450 cm
17. (___/1) How would you write the number 6.937×10^{-7} in decimal form?
- 0.0006937
 - 0.00006937
 - 0.000006937
 - 0.0000006937
 - 0.00000006937
18. (___/1) A hot air balloon rises to an altitude of 600 fathoms. What is this height in feet? (1 fathom = 6 feet)
- 100 ft
 - 600 ft
 - 1200 ft
 - 3600 ft
 - Cannot be determined from the information given

19. (___/1) Given the mass of an electron, how many electrons would it take to make 2.5 kg of electrons
- 2.7×10^{30}
 - 2.7×10^{-30}
 - 2.3×10^{-30}
 - 3.6×10^{-30}
 - 3.6×10^{30}
20. (___/1) How many m/s is 50 mi/h equivalent to? (1 mi = 1609 m).
- 0.045 m/s
 - 2.2 m/s
 - 22 m/s
 - 45 m/s
 - 49 m/s
21. (___/1) A football field is 120 yd long (counting the endzones) and 50 yd wide. What is the area of the football field in m^2 ? (1 yd = 91.44 cm).
- $7.2 \times 10^{-1} m^2$
 - 4.2×10^3
 - 5.0×10^3
 - 4.2×10^7
 - 5.0×10^7
22. (___/1) A thick-walled metal pipe of length 20.0 cm has an inside diameter of 2.00 cm and an outside diameter 2.40 cm. What is the total surface area (inside and out) in m^2 if we neglect the ends?
- $276 m^2$
 - $553 m^2$
 - $138 m^2$
 - $0.0276 m^2$
 - $0.0552 m^2$
23. (___/1) Concrete is sold by the cubic yard. 5.00 cubic yards of concrete would equal how many cubic meters? (1m = 1.094 yds)
- $0.239 m^3$
 - $0.262 m^3$
 - $3.82 m^3$
 - $4.18 m^3$
 - $4.57 m^3$
24. (___/1) An average human heart has a heart rate of 70 beats per minute. Using that average how many times has a teenager's heart beaten over 17 years?
- 8.9×10^6
 - 1.0×10^7
 - 3.7×10^7
 - 6.3×10^8
 - 3.7×10^{10}

FREE RESPONSE

25. The radius of the earth is 3963 mi. (1mi = 1609m)

- a. (___/2) If you jogged at a 10 min/mi pace, how many days would it take to jog around the world?

- b. (___/2) What is the surface area of the earth in m^2 ?

- c. (___/3) If the density of the earth is approximately 5.513 g/cm^3 , what is the weight of the earth in pounds? ($1\text{kg} \approx 2.2 \text{ lbs}$)

26. The mass of Mars ($1.41 \times 10^{23} \text{ lbs}$) is about one-tenth that of the Earth, and its radius is about half that of the Earth's. ($1\text{kg} \approx 2.2 \text{ lbs}$)

- a. (___/5) What is the mean density ($\rho = \frac{\text{mass}}{\text{volume}}$) of Mars in kg/m^3 ?

- b. (___/5) How does the mean density of Mars compare to the mean density of the Earth?

27. (___/4) Explain how random and systematic error affected your Ball Bounce lab.

28. (___/4) Determine and justify a propagated uncertainty for your 'bounce constant'.

29. (___/4) What is Physics?
