

Answer the questions on a separate paper. Show all your work.
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Name: \_\_\_\_\_

1. What are the names of the following elements?

- (a) (1 point) Na
- (b) (1 point) Pb
- (c) (1 point) N
- (d) (1 point) K
- (e) (1 point) Fe

2. Reduce the following fractions:

- (a) (1 point)  $\frac{120}{400}$
- (b) (1 point)  $\frac{256\pi}{32}$
- (c) (1 point)  $\frac{x^2-1}{x+1}$
- (d) (1 point)  $\frac{2x^2+4x+2}{x^2-1}$

3. Convert the following measurements:

- (a) (1 point) how many inches in 3 yards?
- (b) (1 point) how many tablespoons in one gallon?
- (c) (1 point) how many pounds in 373 ounces?
- (d) (1 point) how many kilograms in 1,000,000,000 grams?
- (e) (1 point) how many centimeters in 375 meters?

4. (5 points) What is  $12.0 \times 3.21$ ? Choose the most correct answer:

- A. 39
- B. 38.5
- C. 38.52
- D. 38.520
- E. 38.5200

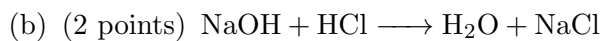
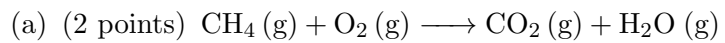
5. (5 points) What is  $12.0 + 3.21$ ? Choose the most correct answer:

- A. 15.2

- B. 15.21
  - C. 15.210
  - D. 15.2100
  - E. 15.21000
6. (1 point) How much wood would a woodchuck chuck if a woodchuck could chuck wood?
  7. (1 point) The boiling point of water in Seattle is  $212^{\circ}\text{F}$ , the boiling point of water in Moscow is  $206^{\circ}\text{F}$ . Why is it lower in Moscow?
  8. Give definitions for the following:
    - (a) (1 point) heat
    - (b) (1 point) electrolyte
    - (c) (1 point) acid
    - (d) (1 point) base
    - (e) (1 point) energy
  9. Solve the following equations for the named variable:
    - (a) (1 point)  $12 = \frac{2}{5}x$  (solve for  $x$ )
    - (b) (1 point)  $3t - 17 = 22$  (solve for  $t$ )
    - (c) (1 point)  $\frac{y^2-1}{y+1} = 0$  (solve for  $y$ )
    - (d) (1 point)  $5\beta + 12 = 2\beta$  (solve for  $\beta$ )
    - (e) (1 point)  $\frac{2\theta-1}{2\theta+1} = 3$  (solve for  $\theta$ )
  10. (5 points) What happens when you leave an ice tray full of water the deep freezer for several days? Choose all the correct answers.
    - A. the water gets warmer
    - B. the molecules in the water slow down
    - C. the water undergoes a physical change from liquid to gas
    - D. the water changes phase from liquid to solid
    - E. the water undergoes a chemical change from liquid to solid
  11. (5 points) Which of the following is an example of a chemical reaction?
    - A. a piece of wood burns in a bonfire
    - B. a piece of steak is fed into a meat grinder
    - C. one gram of table salt is dissolved into a glass of water
    - D. a pan of water is brought to a boil, and left boiling until it is dry

E. vinegar and baking soda are combined in a cup and they produce a whole lot of foam

12. Balance the following chemical equations:



This exam has 12 questions for a total of 50 points.