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## Math 7: MCA 1 Practice - Expressions and Equations

Directions: Read each question carefully. Show your work or explain your answer for each problem.

1. The equation $3 c=4 s$ gives the relationship between $c$, the weight of clay, and $s$, the weight of sand in a mixture. There are 6.25 pounds of clay in the mixture. What is the weight of the sand?
A. $\quad 4.69$ pounds
B. $\quad 8.88$ pounds
C. $\quad 18.75$ pounds
D. $\quad 75.00$ pounds
2. To join a health club, Rhonda must pay $\$ 200$ for initial set up and a monthly fee of $\$ 25$. She has $\$ 800$ in savings, how long can she keep her membership at the health club?
3. Simplify: $\quad 3(2.25)^{2}$
4. Simplify: $\quad 5^{2}+3^{3}$
A. 19
B. 34
C. 52
D. 13
5. Which shows a model of: $-3+4$
( A.


0 B.


0 D.

6. Which describes $|k|$ on a number line?
A. The opposite of $k$
B. The same value as $k$
C. $\quad$ A value between $k$ and $-k$
D. A distance $k$ units from 0
7. What is the value of the expression? $\quad|-16|-|8|$
A. -24
B. -8
C. 8
D. 24
8. The table below shows the one-day changes in the prices of four different companies stores on Tuesday. Which company's stock price changed the most on Tuesday?
A. Company A
B. Company B
C. Company C
D. Company D

| Company | Amount of Price Change |
| :---: | :---: |
| A | -1.32 |
| B | +0.76 |
| C | -0.83 |
| D | +1.25 |

9. Solve the following equation. $\frac{x}{4}=-8$
10. Match the equation with the property demonstrated.

| $8 \times 5 \times 6=5 \times 6 \times 8$ | associative property |
| :--- | :--- |
| $(1+2)+3=1+(2+3)$ | distributive property |
| $3(x+5)=3 x+15$ | commutative property |

11. Simplify the following expression: $3 x-7 x+1$
12. Simplify the following expression: $2(x+7)-8$
13. Evaluate the expression for the given values of the variables: $-3 x+2 y$

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\text { When: } x=-3 \text { and } y=3
$$

When: $\quad x=4$ and $y=-\frac{1}{2}$
14. What is the value of $4 t^{2}+6 r-t r$ when $t=-3$ and $r=5$ ?
15. Two friends hammered a line of nails into two different boards. Bill hammered more nails in his than Greg did in his. Bill's board was shorter than Greg's. On which board are the nails hammered closer together?
A. Bill's board
B. Greg's Board
C. their nails are spaced the same
D. not enough information to tell

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x+9=-15
$$

17. Match each algebraic expression with the correct phrase underneath them.
18. $\qquad$ $2 x+5$
A. twice the sum of $x$ and 5
19. $\qquad$ $2(x+5)$
B. five less than the product of 2 and $x$
20. $\qquad$ $2 x-5$
C. five more than the product of 2 and $x$
21. $\qquad$ D. two times the difference of $x$ and 5
22. Which of the following inequalities shows that $x$ is at least -3 and less than 5 ?
A. $-3<x<5$
B. $-3 \leq x \leq 5$
C. $\quad-3 \leq x<5$
D. $\quad-3<x \leq 5$
23. The scale shown below is balanced. Which of the following will balance one

A. $\Theta$
B. $\theta \ominus$
C. $\theta \Theta \ominus \ominus$
D. $\theta \theta \theta \theta \Theta \ominus$
