Name: $\qquad$

Selected Response: Put the letter of the best response in the space provided.

1. Which is an algebraic expression?
A. $6=2 x-4$
B. $3 x$
C. $4 x=8$
D. $\frac{x}{5}=10$
2. Solve: $t+13=25$

3. What equation represents: "four less than a number divided by two is one?"

| 1.$)$ |  |
| :--- | :--- |
| 2.$)$ |  |
| 3.$)$ |  |
| 4.$)$ |  |
| 5.$)$ |  |
| 6.$)$ |  |
| 7.$)$ |  |
| 8.$)$ |  |
| 9.$)$ |  |
| 10.$)$ |  |

A. $\frac{4}{x}-2=1$
B. $\frac{x}{4}-2=1$
$\frac{n}{2}-4=1$
C. $\frac{x}{2}-4=1$
D. $4-\frac{\pi}{2}=1$
4. Which equation would be best to solve for the side length of an equilateral triangle (all sides are the same) if the distance all around is 24 ?
A. $3 s=24$
B. $\frac{c}{2}=24$
C. $3+s=24$
D. $24-s=3$

$$
3 s=24
$$


5. What is the unknown value of $x$ on the balance scale below?

A. $x=10$
B. $x=15$
C. $x=25$
D. $x=30$

6. What is the second step to solve $4 y-3=5$ algebraically?

$$
+3+3
$$

A. Add 3 to both sides
B. Subtract 3 from both sides

Divide each side by 4
$\frac{4 y}{4}=\frac{8}{4}$
D. Multiply each side by 4
7. Which equation has a solution $k=12$ ?
A. $\frac{k}{2}=12$
$\frac{24}{12}=2$
C. $12 k=24$
D. $24=3 k+12$
8. Sam used systematic trail to solve the equation $5 n+1=16$. She tried $m=4$. What will she notice about her answer?
A. Her answer is too small
B. That $m$ equals 4
$\frac{\text { C. Her answer is too big }}{\text { D. Her answer is correct }}$
$21 \ldots$ too big should be 16 .
9. What is the solution to the equation modeled by algebra tiles below?

10. Alex checked out books from the library. She returned 4 books, and still has 3 books at home. How many books did she borrow?
A. 1
B. 3
C. 5
D. 7

Constructed Response:

$$
\begin{gathered}
x-4=3 \\
+4+4 \\
x=7
\end{gathered}
$$

Show ALL workings for FULL marks!!!
11. Solve each using systematic trail or inspection. [2 marks]
A. $4 x=20$

$$
\begin{array}{r}
4(?)=20 \\
x=5
\end{array}
$$

guess and
check
know the
B. $x+3=12$ ansiver Without ? $+3=12$ workings

D Positive ${ }^{12 .}$ Solve each using algebra tiles. Verify your solution. [4 marks]
Enegative
A. $t-5=9$

13. Solve the equation using the pan balances provided. Verify your solution. [3 marks]

$$
2 x+3=7
$$


14. Solve each equation algebraically. Show all workings for FULL marks. [8 marks]
A. $x+1 / 2=53$

$$
\begin{aligned}
& -\sqrt{2}-12 \\
& x=41
\end{aligned}
$$

с. $y^{4}=4 \times 6$

$$
f=24
$$

E. $\quad 4 x+12=24$

$$
\begin{aligned}
& -12 \\
& \frac{4 x=12}{4} \\
& x=3
\end{aligned}
$$


D. $\quad x-\$=-12$

$$
x=-7
$$

F. $\quad 2 d-7 /=\begin{aligned} & 17 \\ & +3\end{aligned}$

$$
\frac{2 d}{2}=\frac{20}{2}
$$

$$
d=10
$$

15. Cohen tutors to earn extra money. He charges $\$ 25$ for each hour he tutors. During Christmas all his students combined, gave him $\$ 50$ extra in tips. If he made a total of $\$ 150$ during the month of December, how many hours did he tutor?
A. Choose and state a variable and write an equation you can use to solve the problem.

$$
\begin{aligned}
& h=\# \text { of hours he tutored } \\
& 25 h+50=150
\end{aligned}
$$

B. Solve the equation in order to state the answer to the problem.

$$
\begin{aligned}
25 h+5 \phi= & 150 \\
-80 & -50
\end{aligned}
$$

$$
\begin{gathered}
\frac{\partial \phi h}{\partial 5}=\frac{100}{\partial 5} \\
h=4
\end{gathered}
$$

C. Verify the solution.
[1 mark]

$$
\begin{gathered}
25 h+50=150 \\
25(4)+50 \\
100+50 \\
150
\end{gathered}
$$

