A mad scientist has discovered a formula to bring people back to life. He finds that if he knows how old the person was when they died ( $A$, in years), how tall they were ( $T$, in inches), and how much they weighed ( $W$, in pounds), he can determine the amount of electricity ( $E$, in joules) required to bring them back.

The formula is:
$\frac{A \cdot W}{T}=E$
After completing 10 successful experiments, the scientist realizes his assistant is a very poor note taker. For each experiment the assistant forgot to fill in one of the variables in their records. Find the missing variable for each experiment.

| Age (A) | Weight (W) | Height (T) | Electricity (E) |
| :--- | :--- | :--- | :--- |
| 41 | 170 | 74 |  |
| 28 |  | 76 | 75.5 |
| 42 | 166 |  | 102.5 |
| 32 | 167 | 70 | 71 |
|  | 124 | 72 | 90.5 |
| 30 | 115 | 66 |  |
| 33 |  | 64 | 57.5 |
| 26 | 158 | 72 | 66.8 |
| 30 | 175 |  | 128.8 |
|  |  |  |  |

The scientist doesn't want to have to solve for each variable every single time, so he solves the original equation in order to find equations that solve for $\mathrm{A}, \mathrm{T}$, and W . What are those equations?
$\frac{A \cdot W}{T}=E$

1. $\mathrm{A}=$
2. $\mathrm{T}=$
3. $\mathrm{W}=$

## Literal Equation Practice

Solve for the indicated variable in each question.
4. $2 x-8 y=32$, solve for $y$
5. $-15 x-3 y=9$, solve for $y$
6. $\boldsymbol{a}=\boldsymbol{b}+\boldsymbol{c}$, solve for c .
7. $\boldsymbol{h}=\boldsymbol{j}+\boldsymbol{k} \boldsymbol{l}$, solve for k
8. $\boldsymbol{x}=\frac{\boldsymbol{y}}{\boldsymbol{z}}$, solve for z
9. $\boldsymbol{x}=\frac{\boldsymbol{y}}{\boldsymbol{z}}$, solve for y
10. $\boldsymbol{g}=\boldsymbol{a}-\boldsymbol{c}+\boldsymbol{b}$, solve for $a$
11. $\boldsymbol{a c}=\boldsymbol{r}+\boldsymbol{d}$, solve for $a$
\#12-15: Use the following formula and solve for the indicated variable.

$$
k=r+x y z
$$

12. Solve for $r$.
13. Solve for $x$.
14. Solve for $y$.
15. Solve for $z$.
\#16-18: Use the values given to calculate the indicated variable.
16. If $r=5, x=3, y=1$, and $z=6$. what is $k$ ?
17. If $k=20, r=2, x=2$, and $z=3$. what is $y$ ?
18. If $k=30, r=24, y=3$, and $z=4$. what is $x$ ?
\#19-20: Put into slope-intercept form. (Solve for $y$.)
19. $5 x-15 y=60$
20. $-3 x+2 y=-12$
\#21-24: Solve for the indicated variable.
21. $b=r-w$, for $w$.
22. $t=g+k p$, for $p$.
23. $h=\frac{c}{y}$, for $y$.
24. $s=h+y-z$, for $z$.
