p.26-27 Solving by Substitution 3 3-2

Warm-Up:
If $a=-2$, then find the value of $b$.

$$
\begin{aligned}
& a+3 b=4 \\
&(-2)+3 b=4 \\
&+2+2
\end{aligned} \begin{aligned}
3 b & =6 \\
b & =2
\end{aligned}
$$



SOLVING SYSTEMS OF EQUATIONS USING...

THE SUBSTITUTION METHOD- Notes
1.) Solve one equation for one of the variables
2.) Substitute the expression for this first variable


Solve this system of equations using the substitution method.
2.) $2 x-y=10$ Solution: $(4,-2)$ $5 x+3 y=14$
(1) $2 x-y=10$
$-2 x-2 x$ $\begin{aligned} \frac{-y}{-1} & =\frac{-2 x+10}{-1} \\ y & =2 x-10\end{aligned}$
(2) $5 x+3(2 x-10)=14$

Check: $\begin{aligned} 5(4)+3(-2) & =14 \\ 20+(-6) & =14 \\ 14 & =14\end{aligned}$
$\begin{aligned} 2(4)-(-2) & =10 \\ 8+2 & =10 \\ 10 & =10\end{aligned}$
(3) $2(4)-y=10$
$5 x+6 x-30=14$
$11 x=44$
$x=4$
$8-y=10$
$-y=2$
$y=-2$

## Assignment p. 146 \#10-18 evens.

Solve each system by substitution. Check your answers.
10. $\left\{\begin{array}{l}4 x+2 y=7 \\ y=5 x\end{array}\right.$
11. $\left\{\begin{array}{l}3 c+2 d=2 \\ d=4\end{array}\right.$
12. $\left\{\begin{array}{l}x+12 y=68 \\ x=8 y-12\end{array}\right.$
13. $\left\{\begin{array}{l}4 p+2 q=8 \\ q=2 p+1\end{array}\right.$
14. $\begin{aligned} x+3 y & =7 \\ 2 x-4 y & =24\end{aligned}$
15. $\left\{\begin{aligned} x+6 y & =2 \\ 5 x+4 y & =36\end{aligned}\right.$
16. $\left\{\begin{array}{l}t=2 r+3 \\ 5 r-4 t=6\end{array}\right.$
17. $\left\{\begin{array}{l}y=2 x-1 \\ 3 x-y=-1\end{array}\right.$
18. $\left\{\begin{aligned} r+s & =-12 \\ 4 r-6 s & =12\end{aligned}\right.$

