Name $\qquad$ Date $\qquad$

Write an equation of the line in $y=m x+b$ form.
1)

2)


Write an equation in slope-intercept form.
3) $m=4$ and $b=-5$
4) passes through $(0,-1)$ and $(2,-1)$
5) slope $=2$, passes through $(5,2)$
6) slope of $2, y$-intercept of 0
7) passes through $(-2,-9)$ and $(2,4)$
8) passes through $(-2,7)$ and $(-2,1)$

Write the equation in slope intercept form for the table.
9)

| $x$ | $y$ |
| :--- | :--- |
| 0 | 0 |
| 1 | 2.5 |
| 2 | 5 |
| 3 | 7.5 |
| 4 | 10 |

10) 

| $x$ | $y$ |
| ---: | ---: |
| 0 | 3 |
| 1 | -1 |
| 2 | -5 |
| 3 | -9 |
| 4 | -13 |

11) 

| $x$ | $y$ |
| ---: | ---: |
| 1 | 1 |
| 2 | 5 |
| 3 | 9 |
| 4 | 13 |
| 5 | 17 |

Identify the slope and the $y$-intercept and then graph the line.
12) $-3 x+2 y=-2$

14) $y=3 x+5$

13) $y=x$

15) $x=-4$


Write an equation and use it to solve the following word problems.
16) The sum of two numbers is 84 . The larger of the two numbers is 12 more than three times the smaller number. Find the two numbers.
17) The perimeter of a rectangle is 114 feet. Its length is three more than twice its width. Find the dimensions of the rectangle.
18) Find three consecutive odd integers whose sum is 249 .
19) Rod is paid an overtime rate of $\$ 25$ per hour after his basic wage of $\$ 600$ per week. Write an equation in slope-intercept form for the total pay $p$ if he works h hour of overtime. What would Rod get paid if he works 10 hours of overtime?
20) A plumber charges a fee of $\$ 50$ to make a house call. He also charges $\$ 25$ an hour for labor. Write an equation that you could use to find the amount a plumber charges for a house call based on the number of hours of labor. Let $x$ represent the number of hours for labor and $y$ represent the total cost. What would the plumber make if he worked 5 hours on a house?

## Solve for the indicated variable.

21) Solve for $h: V=\frac{1}{3} B h$
22) Solve for $L$ : $P=2 W+2 L$
23) Solve for t: $d=r t$
24) Solve for $x: y=25 x-30$

Algebraic Proofs. Solve the equation and give a reason for each step.
25)

| Equation | Steps |
| :---: | :---: |
| $2(4 x+6)=8$ |  |
|  |  |
|  |  |
|  |  |

26) 

| Equation | Steps |
| :---: | :---: |
| $5=\frac{x+2}{3}$ |  |
|  |  |
|  |  |
|  |  |

27) 

| Equation | Steps |
| :---: | :---: |
| $8+x-2=3 x+11-x$ |  |
|  |  |
|  |  |
|  |  |

Solve the equation or inequality.
28) $\frac{2}{3} x-7=-1$
29) $-3 x+2=3 x+8$

