Date $\qquad$ Period $\qquad$
Write the slope-intercept form of the equation of the line through the given points.

1) through: $(1,-2)$ and ( $0,-3)$
2) through: ( $-2,-2$ ) and (4, -4)

Write the slope-intercept form of the equation of the line described.
3) through: $(-4,3)$, perp. to $y=4 x-2$
4) through: $(-3,5)$, perp. to $y=x-1$

## Solve each equation.

5) $5-10|n+6|=-75$
6) $8|p-9|+2=114$

Solve each inequality and graph its solution.
7) $-8|a+1|-6>-78$
8) $2|x-1|-9<1$


Solve each equation.
9) $110=-2(1-8 n)$
10) $v+5(8 v-7)=-363$

Simplify. Your answer should contain only positive exponents.
11) $x^{4} y^{4} \cdot y x^{3}$
12) $4 x^{3} y^{-4} \cdot 3 x^{4} y^{0}$
13) $\left(2 x^{-4} y^{4} z^{-2}\right)^{-2}$
14) $\left(2 p r^{-3}\right)^{4}$
15) $\frac{2 m^{-4} n^{-1}}{\left(2 m^{-4} n^{3}\right)^{3}}$
16) $\left(\frac{2 b a^{-3}}{a^{4}}\right)^{-2}$

Factor the common factor out of each expression.
17) $27+15 x-3 x^{3}$
18) $54 x^{5}-12 x^{4}+48 x^{3}$
19) Solve the following formula for ' V '.

$$
E=\frac{1}{2} M V^{2}
$$

20) Solve the following formula for ' T ".

$$
P V=N R T
$$

## Find each product.

22) $(6 p+5)(5 p+3)$
23) $(5 k-4)\left(4 k^{2}-8 k+8\right)$
) $(5 k-4)\left(4 k^{2}-8 k+8\right)$
24) $(6 n+5)\left(3 n^{2}+4 n+4\right)$
25) In 1967, the XYZ Paint Company had 75 employees. In 1990, it had 103 employees. Assuming that the number of employees increases linearly with time:
a) Find the equation that models this situation. (Please use variables that make sense.)
b) What are the units of slope?
c) How many employees will the company have in 2019 ?
d) Draw a graph of this situation. Make sure your axes are properly labeled with the correct quantities and units of measure.

26) In 2010, the Palmer Motor Company sold 50 vehicals. In 2012, it sold 85 vehicals. Assuming that the number of cars sold increases linearly with time:
a) Find the equation that models this situation. (Please use variables that make sense.)
b) What are the units of slope?
c) How many cars will they sell in 2019 ?
d) Draw a graph of this situation. Make sure your axes are properly labeled with the correct quantities and units of measure.

