$\qquad$ Date $\qquad$

## Expressions and Equations Review Packet

1) Vocabulary

Don't forget to study your terms. The Quizlet is a great resource.
2) Evaluating Expressions


Input the values and simplify using Order of Operations (PEMDAS/GEMS)

| $\boldsymbol{m}$ | $m+7$ |
| :---: | :---: |
| 5 |  |
| 8 |  |
| 20 |  |

3) Verbal Phrases

| $\boldsymbol{d}$ | $\frac{\boldsymbol{d}}{\mathbf{2}}$ |
| :---: | :---: |
| 6 |  |
| 10 |  |
| 42 |  |


| $n$ | $4 \boldsymbol{n}+3$ |
| :---: | :---: |
| 4 |  |
| 6 |  |
| 12 |  |

Writing Expressions:
a) 5 more than a number $\qquad$ b) The sum of 8 and a number $\qquad$
c) Half of a number $\qquad$ d) 12 less than a number $\qquad$
e) Jane is twice as old as Ed. How old is Jane if Ed is $d$ years old? $\qquad$
f) If you read 9 pages a day for $d$ days. How many pages did you read? $\qquad$

## Writing Equations:

a) The sum of 25 and a number is 34 $\qquad$
b) Jan has $d$ dollar in her bank account. She spends $\$ 12$ and has $\$ 54$ left $\qquad$
c) Peter makes $\$ 12$ an hour $(h)$ stacking wood. He now has $\$ 288$ $\qquad$
Writing Inequalities:

a) $x$ is less than 10 $\qquad$ b) $y$ is greater than 52
c) $x$ is no more than 89 $\qquad$ d) $x$ is at most 150 lbs .
e) You must be at least 54 inches to ride on the roller coaster $\qquad$
$\qquad$
$\qquad$

## 4) Combine Like Terms

Only combine terms that are 'alike’. Use Highlighters
Only use an exponent if the variables are being multiplied
a) $4 x+3 x+7+2$
b) $7 x+2 y+3 x+2+y$
c) $6 m+12-2 m-1$
d) $4 c+4 d+7 c-3 d$
e) $4 b+3 a+7 b+2 a$
f) $4 g-2 g+7 h-2 h$

Complete the table by expanding or combining each expression.

| Expanded Terms | Combined Terms |
| :---: | :---: |
| $b+b+b+b+b$ | $4 m$ |
| $a+a+a$ |  |
| $x+x+y+x+y$ | $4 p+n$ |
|  |  |

## 5) Distribute and Combine Like Terms

Santa Hat- Multiply EVERY term in the parentheses

a) $5(x+3)$
b) $9(7-3 j)$
c) $4(2 x+3 y-6)$
d) $4(2 x+3)+3 x$
e) $9(4-3 b)-12$
f) $4(4 a+3)-6 a+2$

## 6) Factor

Pull out the GCF (take out the largest group of friends). Distribute to check.
a) $5 x+10$
b) $12 m-24$
c) $2-6 a$
d) $4 m+12 n-8$
e) $18 x+27 y-63$
f) $42 g-56$
7) Solving One-Step and Two-Step Equations

Use inverse operation to solve equations.
Input your solution to check your answers.
a) $5 x=45$
b) $m-2.4=3$
c) $c+19=45$

Check:

Check:
e) $3 m-7=2$
f) $3(g+2)=16$
d) $\frac{x}{9}+5=12$

Check:
a) The perimeter of the rectangle is 36 ft .
$x+5$
$x$

Equation:

Missing Side Lengths:

Check:
b) The area of the rectangle is $48 \mathrm{~m}^{2}$
$4 x$

2


## Equation:

Missing Side Lengths:
Check:
9) Tables and Rules

Find the Rule in the input/output table and write the equation
Determine the 'independent variable' and the 'dependent variable'
Independent Variable- Input value. Usually $x$
Dependent Variable- Output Value. Usually y

| $x$ | $y$ |
| :---: | :---: |
| 2 | 7 |
| 3 | 8 |
| 4 |  |
|  | 14 |

Equation:
Independent Variable:
Dependent Variable:

| $\boldsymbol{m}$ | $n$ |
| :---: | :---: |
| 9 | 7 |
| 11 | 9 |
| 13 |  |
|  | 24 |

Equation:
Independent Variable:
Dependent Variable:

| $a$ | $b$ |
| :---: | :---: |
| 3 | 9 |
| 5 | 15 |
| 7 |  |
|  | 36 |

Equation:
Independent Variable:
Dependent Variable:

| $g$ | $h$ |
| :---: | :---: |
| 12 | 2 |
| 18 | 3 |
| 24 |  |
|  | 8 |

Equation:
Independent Variable:
Dependent Variable:
10) Is the value a solution to the inequality?
a) $m=5$
b) $g=-7$
c) $y=0$
d) $h=2.4$
$\mathrm{m}<5$
$g \leq-7$
$5 \leq y$
$h<3$
yes or no?
yes or no?
yes or no?
yes or no?
e) $m=3$
f) $g=3$
g) $y=0$
h) $h=1.9$
$m+2 \leq 5$
$2 g \geq 7$
$4 \geq 5 y$
$h+0.9<3$
yes or no?
yes or no?
yes or no?
yes or no?

## STUDY STUDY STUDY STUDY STUDY STUDY STUDY STUDY

d) $x \geq-1$


Write an Inequality
a)


Inequality:
b) $x>-3$

e) $x<0$

b)


Inequality:
c) $x \leq 4$

f) $x \geq 1.5$

c)


Inequality:

## Additional Suggestions:

Use 'checking 'strategies that we have been talking about in class.
Review your Quiz. Make sure you understand your errors.
Come and see me before or after school on Tuesday if you need help.

