

| Name:                                |   | Date:                              |  |
|--------------------------------------|---|------------------------------------|--|
| Topic: <b>Warm up - Complete 1-4</b> |   | Class:                             |  |
| Main Ideas/Questions                 | Notes/Examples  |                                    |  |
| <b>DISTRIBUTIVE PROPERTY</b>         | <p>Recall: The distributive property states that</p> $a(b + c) = ab + ac$ or $a(b - c) = ab - ac$ |                                    |  |
| <b>GUIDED EXAMPLES</b>               | $1 \quad 4(x + 9)$<br>$4x + 4(9)$<br>$4x + 36$  | $2 \quad 7(k - 3)$<br>$7k - 21$    |  |
|                                      | $3 \quad -3(n - 8)$<br>$-3n - (-24)$<br>$-3n + 24$  | $4 \quad -2(5x - 2)$<br>$-10x + 4$ |  |
| <b>YOU TRY!</b><br><br># 1-15        | <b>Directions:</b> Simplify each expression by distributing.                                      |                                    |  |
|                                      | 1. $7(x + 5)$   | 2. $5(w - 4)$                      | 3. $-5(m - 5)$   |
|                                      | 4. $9(2 - a)$   | 5. $2(y + 3)$                      | 6. $-2(x + 7)$   |
|                                      | 7. $-7(3 - 5m)$<br>$-21 + 35m$  | 8. $3(2n + 8)$<br>$6n + 24$        | 9. $-12(c + 4)$<br>$-12c - 48$   |
|                                      | 10. $-2(4k + 5)$<br>$-8k - 10$  | 11. $-(k - 2)$<br>$-k + 2$         | 12. $4(1 - 7p)$<br>$4 - 28p$   |
|                                      | 13. $9(2r - 7)$<br>$18r - 63$   | 14. $-(5k + 4)$<br>$-5k - 4$       | 15. $\frac{4}{9}(\frac{3}{8}w + 10)$<br>$\frac{12}{72}w + \frac{40}{9}$<br>$\frac{1}{6}w + 4\frac{4}{9}$ |

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| Main Ideas/Questions   | Notes/Examples   |  |  |
| Evaluating Expressions | <ul style="list-style-type: none"> <li>What is an algebraic expression? An expression that contains one or more <b>Variable</b></li> <li>To evaluate: <b>Substitute</b> the variables with their given values, then follow the <b>order of operations</b></li> </ul> |  |  |
|                        | <p><b>Directions:</b> Evaluate each expression using the variable replacements.</p>  |  |  |
| Examples               | 1. $7x + 4y$ if $x = 5$ and $y = -3$   | 2. $9a^2 - 2b^2$ if $a = 4$ and $b = 7$                        |  |
|                        | 3. $4a^2 + 5m$ if $m = -2$   | 4. $(8c - d) \div cd$ if $c = 2$ and $d = -4$                  |  |
|                        | $(-2)(-2)$<br>$4(-2)^2 + 5(-2)$<br>$4(4) + 5(-2)$<br>$16 + (-10)$<br>$6$   | $[8(2) - (-4)] \div (2)(-4)$<br>$16 - (-4)$<br>$20 \div 2(-4)$ |  |
|                        | 5. $(ab)^2 - 4b^3 + 1$ if $a = 3$ and $b = 2$  | 6. $2 r  - 3rs$ if $r = -5$ and $s = 4$                        |  |
|                        | 7. $(w - v)^2 + 2v - 7w$ if $w = -4$ and $v = 1$   | 8. $\frac{2}{3}x^2 - 5x + 8$ if $x = 6$                        |  |

1.  $7(x) + 4(y)$  if  $x = 5$  and  $y = -3$

$$7(5) + 4(-3)$$

$$35 + -12$$

$$\textcircled{23}$$

2.  $9a^2 - 2b^2$  if  $a = 4$  and  $b = 7$

$$\begin{array}{r} 9(4)^2 - 2(7)^2 \\ 9(16) - 2(49) \\ 144 - 98 \\ \hline 46 \end{array}$$

$$\begin{array}{r} 16 \\ 9 \\ \hline 144 \end{array} \quad \begin{array}{r} 49 \\ 2 \\ \hline 98 \end{array}$$

|  |  |  |
|--|--|--|
|  | <b>9.</b> $3c^2 - cd + 7d^2$ if $c = -3$ and $d = -2$                      | <b>10.</b> $\sqrt{3p - q} - p^2 + pq$ if $p = 10$<br>and $q = 14$        |
|  | <b>11.</b> $\frac{2ab}{7b - a^2b}$ if $a = 3$ and $b = 12$                 | <b>12.</b> $\frac{m^4 - m^2n^2}{2m - 2n}$ if $m = 2$ and $n = -9$        |
|  | <b>13.</b> $\frac{28 - 4y^2}{xy - 2x^2}$ if $x = -8$ and $y = -5$          | <b>14.</b> $\frac{r^2s^2 - 22}{r^2 - (s^3 + 5r)}$ if $r = 7$ and $s = 2$ |
|  | <b>15.</b> $\frac{3}{4}c - \frac{1}{6}d$ if $c = \frac{2}{9}$ and $d = -4$ | <b>16.</b> $5x^2 - 10x + 3$ if $x = \frac{1}{4}$                         |

Homework

# According to Astronomers, What Is a "Light Year"?



Write the letter of each exercise in the box containing the answer.  
Answers for the top half of the page are in the top row of boxes.

Evaluate for  $a = 5, b = 2, c = 6$ .

- E.  $8a$
- O.  $12b$
- T.  $ab$
- V.  $4bc$
- G.  $a + b + c$
- I.  $50 - c$
- W.  $7(a + c)$
- T.  $\frac{c}{b}$

Evaluate for  $w = 9, x = 10, y = 3$ .

- E.  $5(x + 2)$
- I.  $(4w) + y$
- M.  $8(x + y)$
- S.  $\frac{wx}{y}$
- H.  $\frac{6x}{5y}$
- T.  $100 - (x + y)$
- N.  $x \cdot x$
- L.  $\frac{w + x + y}{2}$

|    |    |    |    |    |   |    |    |    |    |    |    |    |     |    |     |   |   |    |
|----|----|----|----|----|---|----|----|----|----|----|----|----|-----|----|-----|---|---|----|
| 12 | 10 | 96 | 44 | 30 | 8 | 87 | 77 | 40 | 11 | 48 | 60 | 17 | 104 | 24 | 100 | 3 | 4 | 13 |
|----|----|----|----|----|---|----|----|----|----|----|----|----|-----|----|-----|---|---|----|

Evaluate for  $k = 2.5, m = 4, n = 12$ .

- S.  $2km$
- E.  $n - (m + k)$
- I.  $m \cdot m \cdot m$
- O.  $\frac{kn}{5}$
- H.  $\frac{m + n}{m}$
- A.  $3(m + n)$
- S.  $\frac{n \cdot n}{m}$
- E.  $\frac{150}{km}$

Evaluate for  $d = 10, u = 7, e = 3.2$ .

- I.  $de$
- W.  $\frac{u \cdot u}{d}$
- S.  $\frac{500}{d \cdot d}$
- T.  $u - e$
- C.  $9du$
- L.  $d(e + 5)$
- R.  $15(d - u)$
- L.  $\frac{ue}{eu}$

|    |     |    |     |   |    |    |    |   |    |   |     |    |   |   |    |    |     |    |
|----|-----|----|-----|---|----|----|----|---|----|---|-----|----|---|---|----|----|-----|----|
| 28 | 4.9 | 64 | 3.8 | 4 | 75 | 82 | 15 | 5 | 20 | 9 | 630 | 48 | 1 | 6 | 45 | 32 | 5.5 | 36 |
|----|-----|----|-----|---|----|----|----|---|----|---|-----|----|---|---|----|----|-----|----|

IXL  
1<sup>st</sup> grade R1  
R4  
8<sup>th</sup> grade E9

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