1.5 The Distributive Property

For any numbers a, b, and c: $a(b+c) = ab + ac$

$a(b-c) = ab - ac$

and

$(b+c)a = ba + ca$

$(b-c)a = ba - ca$

EX: $6(2+5) = 6(2) + 6(5)$

$= 12 + 30$

$= \boxed{42}$

EX: Rewrite each expression using the Distributive Prop. Then evaluate.

A. $(7+2)5$

$7(5)+2(5)$

$35 + 10$

$\boxed{45}$

B. $3(11-8)$

$3(11) - 3(8)$

$33 - 24$

$\boxed{9}$

EX: Use the Distributive Property to rewrite and evaluate the following.

A. $82 \cdot 12$

$(80+2)12$

$80(12)+2(12)$

$960 + 24$

$\boxed{984}$

B. $60 \cdot 7\frac{2}{3}$

$60(7 + \frac{2}{3})$

$60(7) + 60(\frac{2}{3})$

$420 + 40$

$\boxed{460}$

EX: Rewrite using the Distributive Property. Then simplify.

A. $12(y+3)$

$12(y) + 12(3)$

$\boxed{12y + 36}$

B. $4(y^2 + 8y + 2)$

$4(y^2) + 4(8y) + 4(2)$

$\boxed{4y^2 + 32y + 8}$

EX: Simplify the following

A. $17a + 21a$

$\boxed{38a}$

B. $\boxed{12b^2} \boxed{-8b^2} + 6b$

$(12-8)b^2 + 6b$

$\boxed{4b^2 + 6b}$