Name: _____ Date: _____

Aim: How can we practice simplifying algebraic expressions?

Simplify each expression by combining like-terms and by using the distributive property.

1. $8x + 2x$

$10x$

2. $-4p + 9p$

$5p$

3. $1.2y + (-3.6y)$

$-2.4y$

4. $5x + 17 - 8x - 36$

$-3x - 19$

5. $\frac{2}{3}x + 3.6 - \frac{1}{2}x - 4.7$

$\frac{4}{6}x \quad -\frac{3}{6}x$

$\frac{1}{6}x + 1.1$

6. $5(x - 8)$

$5x - 40$

7. $-8(-5m + 7) + 1$

$40m - 56 + 1$

$40m - 55$

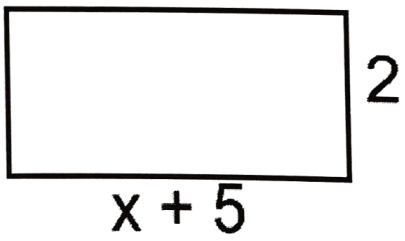
8. $10 - 1(2x + 1)$

$10 - 2x - 1$

$-2x + 9$

Geometry Applications

9. Express the perimeter and area as a simplified algebraic expression.



Perimeter

$2 + 2 + x + 5 + x + 5$

$2x + 14$ units

Area:

$2(x + 5)$

$2x + 10$ units^2

10. a.) What is the result when 15 is subtracted from 20?

$20 - 15$

5

b.) What is the result when 5x is subtracted from 7x?

$7x - 5x$

$2x$

c.) What is the result when 5x is subtracted from -3x?

$-3x - 5x$

$-8x$

d.) What is the result when y + 5 is subtracted from 3y - 2?

$1(3y - 2) - 1(y + 5)$

$3y - 2 - y - 5$

$2y - 7$

11. When $\frac{5}{8}x + 1\frac{1}{3}$ is subtracted from $1\frac{1}{4}x - 5\frac{1}{6}$, the result is:

A $\frac{5}{8}x - 3\frac{5}{6}$

B $\frac{5}{8}x - 6\frac{1}{2}$

C $-\frac{5}{8}x + 3\frac{5}{6}$

D $-\frac{5}{8}x + 6\frac{1}{2}$

$\left(1\frac{1}{4}x - 5\frac{1}{6}\right) - \left(\frac{5}{8}x + 1\frac{1}{3}\right)$

$\left(\frac{5}{4}x - \frac{31}{6}\right) - \left(\frac{5}{8}x + \frac{4}{3}\right)$

$\left(\frac{30}{24}x - \frac{124}{24}\right) - \left(\frac{15}{24}x + \frac{32}{24}\right)$

$\frac{30}{24}x - \frac{124}{24} - \frac{15}{24}x - \frac{32}{24}$

$\frac{15}{24}x - \frac{156}{24}$

$\frac{5}{8}x - 6\frac{1}{2}$

12. Which expression below is equivalent to $\frac{4}{3}x + 4\frac{2}{3}$?

A $\frac{4}{3}(x + 2)$ $\frac{4}{3}x + \frac{8}{3}$

B $\frac{1}{3}(4x + 6)$ $\frac{4}{3}x + \frac{6}{3}$

C $\frac{2}{3}(2x + 4)$ $\frac{4}{3}x + \frac{8}{3}$

D $\frac{2}{3}(2x + 7)$ $\frac{4}{3}x + \frac{14}{3} \rightarrow 4\frac{2}{3}$

$\frac{4}{3}x + \frac{14}{3}$

13. $-4p - (1 - 6p)$

$-4p - 1 + 6p$

$2p - 1$

14. $-7(k - 8) + 2k$

$-7k + 56 + 2k$

$-5k + 56$

15. $3 - 8(7 - 5n)$

$3 - 56 + 40n$

$-53 + 40n$

16. $b - 3 \div 5 - 25$

$-1b + 3$

17. $2(x + 5) - 3(x - 2)$

$2x + 10 - 3x + 6$

$-1x + 16$

18. $x - 1(2x + 7)$

$x - 2x - 7$

$-1x - 7$

19. $-4(3m + 2) + 1$

$-12m - 8 + 1$

$-12m - 7$

20. $8 - 1(2x - 1)$

$8 - 2x + 1$

$-2x + 9$

The TAKEAWAY

When is an expression fully simplified?

when there are no like terms

What property simplifies the following $2(y - 7)$?

Distributive Property