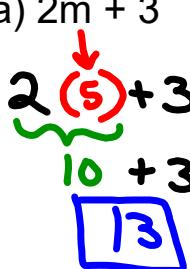


 Warm Up
Grade 7

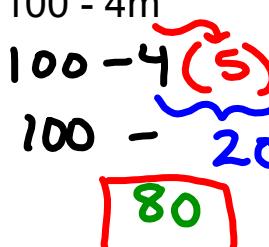
Oct. 13

Evaluate by replacing m with 5.
^{show work}

a) $2m + 3$

$$\begin{array}{r} 2(5)+3 \\ \hline 10+3 \\ \hline 13 \end{array}$$

b) $m - 6$

$$\begin{array}{r} 5-6 \\ \hline -1 \end{array}$$

c) $100 - 4m$

$$\begin{array}{r} 100-4(5) \\ \hline 100-20 \\ \hline 80 \end{array}$$

7. Evaluate each expression by replacing x with 4.

a) $x + 5$

d) $\frac{x}{2}$

b) $3x$

e) $3x + 1$

c) $2x - 1$

f) $20 - 2x$

a) $x+5, x=4$

$$\begin{array}{r} 4+5 \\ \hline 9 \end{array}$$

b) $3x, x=4$

$$\begin{array}{r} 3 \times 4 \\ \hline 12 \end{array}$$

c) $2x-1, x=4$

$$\begin{array}{r} 2 \times 4 - 1 \\ \hline 8 - 1 \\ \hline 7 \end{array}$$

d) $\frac{x}{2}, x=4$

$$\begin{array}{r} \frac{4}{2} \\ \hline 2 \end{array}$$

e) $3x+1, x=4$

$$\begin{array}{r} 3 \times 4 + 1 \\ \hline 12 + 1 \\ \hline 13 \end{array}$$

f) $20 - 2x, x=4$

$$\begin{array}{r} 20 - 2 \times 4 \\ \hline 20 - 8 \\ \hline 12 \end{array}$$

8. Evaluate each expression by replacing z with 7.

a) $z + 12$

d) $3z - 3$

b) $10 - z$

e) $35 - 2z$

c) $5z$

f) $3 + \frac{z}{7}$

a) $z+12, z=7$

$$\begin{array}{r} 7+12 \\ \hline 19 \end{array}$$

b) $10-z, z=7$

$$\begin{array}{r} 10 - 7 \\ \hline 3 \end{array}$$

c) $5z, z=7$

$$\begin{array}{r} 5 \times 7 \\ \hline 35 \end{array}$$

d) $3z - 3, z=7$

$$\begin{array}{r} 3 \times 7 - 3 \\ \hline 21 - 3 \\ \hline 18 \end{array}$$

e) $35 - 2z, z=7$

$$\begin{array}{r} 35 - 2 \times 7 \\ \hline 35 - 14 \\ \hline 21 \end{array}$$

f) $3 + \frac{z}{7}, z=7$

$$\begin{array}{r} 3 + \frac{7}{7} \\ \hline 3 + 1 \\ \hline 4 \end{array}$$

9. **Assessment Focus** Jason works at a local fish and chips restaurant.

He earns \$7/h during the week, and \$9/h on the weekend.

- a) Jason works 8 h during the week and 12 h on the weekend.

Write an expression for his earnings.

- b) Jason works x hours during the week and 5 h on the weekend.

Write an expression for his earnings.

- c) Jason needs \$115 to buy sports equipment. He worked 5 h on the weekend.

How many hours does Jason have to work during the week to have the money he needs?

$$\begin{aligned} h &= \text{hours} \\ \text{a) Weekly Earnings} &= 7h \quad h = 8 \\ &= 7 \times 8 \\ &= 56 \end{aligned}$$

$$\begin{aligned} \text{Weekend Earnings} &= 9h \quad h = 12 \\ &= 9 \times 12 \\ &= 108 \end{aligned}$$

$$\begin{aligned} \text{b) Earnings} &= 7x + (9 \times 5) \\ &= 7x + 45 \end{aligned}$$



$$\begin{aligned} \text{c) Weekend Earnings} &= 9 \times 5 \\ &= 45 \end{aligned}$$

$$\begin{aligned} 115 - 45 &= 70 \\ 7x - \underline{10} &= 70 \end{aligned}$$

Jason needs to work 10 more hours.

10. Take It Further A value of n is substituted in each expression to get the number in the box.

Find each value of n .

a) $5n$

30

c) ~~$4n + 7$~~

15

e) $4 + 6n$

40

$$\begin{array}{r} 3 \times 4 \\ \hline 12 - 1 = 11 \end{array}$$

b) $3n - 1$

11

d) ~~$5n - 4$~~

11

f) $\frac{n}{8}$

5

$n = 40$

a) $5n$ 30
 $n = 6$

b) $3n - 1$ 11
 $- - 1 = 11$
12

$$\begin{array}{r} 3 \times \underline{\quad} = 12 \\ h = 4 \end{array}$$

c) $4n + 7$ 15
 $8 + 7 = 15$
 $4 \times \underline{2} = 8$
 $n = 2$

d) $5n - 4$ 11
 $15 - 4 = 11$
 $5 \times \underline{3} = 15$
 $n = 3$

e) $4 + 6n$ 40
 $4 + \underline{36} = 40$
 $6 \times \underline{6} = 36$
 $n = 6$

f) $\frac{n}{8}$ 5
 $\frac{40}{8} = 5$
 $n = 40$



Combining Like Terms



We have been using variables, which are letters. Can we add the letters? If so, when can we add or combine the variables?

Ex) If you bought 3 apples and 2 hamburgers at the store, could you combine these?

No because they are 2 different items.

Important

When combining variables, you can only combine them if they are the same. If they are the same they are called like terms.

$$\smiley + \smiley \smiley + \smiley \smiley + \smiley \smiley + \smiley \smiley \smiley = \bigcirc \quad 10 \smiley$$

$$2 \star + \star + 3 \star = \bigcirc \quad 6 \star$$

$$4 \circlearrowleft + 2 \circlearrowleft + 1 \circlearrowleft + 2 \circlearrowleft + 1 \circlearrowleft = \bigcirc \quad 10 \circlearrowleft$$

$$\underline{3 \circlearrowleft} + \underline{6 \star} + \underline{5 \star} + \underline{\circlearrowleft} = \bigcirc \quad 4 \circlearrowleft + 11 \star$$

$$1s + 2s + 2s + 2s + 3s = \bigcirc \quad 10s$$

$$2t + t + 3t = \bigcirc \quad 6t$$

$$4f + 2f + f + 2f + f = \bigcirc \quad 10f$$

$$\underline{3d} + \underline{6y} + \underline{5y} + \underline{d} = \bigcirc$$

$$3c + \underline{d} + 6y + 5y =$$

$$4d + 11y$$

$$\begin{array}{c} 2 + 2 + 2 + 2 \\ \text{---} \\ 4(2) \end{array} \quad \left\{ \quad \begin{array}{c} m + m + m \\ \text{---} \\ 3m \end{array} \right.$$

Simplify the following, then evaluate:

(a) $4b + 7b$, $b = 3$

$$\begin{array}{r} 11b \\ 11(3) \\ \hline 33 \end{array}$$

(b) $2s + 7s$, $s = 5$

$$\begin{array}{r} 9s \\ 9(5) \\ \hline 45 \end{array}$$

(c) $5m + 3c + 2m + 4c$, $m = 4$ and $c = 6$

$$\begin{array}{r} 5m + 2m + 3c + 4c \\ 7m + 7c \\ 7(4) + 7(6) \\ \hline 28 + 42 \end{array}$$

$$\Rightarrow \boxed{70}$$

(d) $8p + 4q + 3q + p + 2q + 2q$, $p = 2$ and $q = 5$

$$\begin{array}{r} 8p + p + 4q + 3q + 2q + 2q \\ 9p + 11q \\ 9(2) + 11(5) \\ \hline 18 + 55 \\ \boxed{73} \end{array}$$

Homework

Combining Like Terms Worksheet 2

1 to 14

① $3x + 8x + x + x + x + 2 + 5$
 $14x + 7$

② $2n + 4y + 9y + 7n$
 $\underline{2n+7n} + \underline{4y+9y}$
 $27n + 13y$

Attachments

Grade 7 Unit 1 Combining Like terms WS 1 (WED. OCT2).docx