

Key for All problems
for extra study help.

Ch. 3 Review Only odds assigned

① $z + 8 - 4z$
 $z - 4z + 8 \leftarrow$ ① group like terms
 $(-3z + 8)$ \leftarrow ② combine like terms

② $3n + 7 - n - 3$
 $3n - n + 7 - 3 \leftarrow$ ① group like terms
 $(2n + 4)$ \leftarrow ② combine like terms

③ $10x^2 - y - 12 - 3x^2$
 $10x^2 - 3x^2 - y - 12 \leftarrow$ ① group like terms
 $(7x^2 - y - 12)$ \leftarrow ② combine like terms

④ $4h - 8h = (-4h)$

⑤ $6.4r - 7 - 2.9r$
 $6.4r - 2.9r - 7 \leftarrow$ ① group like terms
 $(3.5r - 7)$ \leftarrow ② combine like terms

⑥ $\frac{3}{5}x + 19 - \frac{3}{20}x - 7$

$\frac{3}{5} \cdot \frac{4}{4} = \frac{12}{20}$
 $\frac{3}{5}x - \frac{3}{20}x + 19 - 7 \leftarrow$ ① group like terms
 $(\frac{9}{20}x + 12)$ \leftarrow ② combine like terms

⑦ $3(2 + q) + 15$

$3 \cdot 2 + 3q + 15 = 6 + 3q + 15 \leftarrow$ ① distribute
 $3q + 6 + 15 \leftarrow$ ② group like terms
 $(3q + 21)$ \leftarrow ③ combine like terms

Ch. 3 Test Review (cont p2)

⑧ $\frac{1}{8}(16m-8)-17$

$\frac{1}{8}(16m) - \frac{1}{8}\left(\frac{8}{1}\right) - 17$ ① Distribute

$2m - 1 - 17$ ② Combine like terms

$2m - 18$

⑨ $-1.5(4-n)+2.8$

$-1.5(4) - (-1.5)n + 2.8 \leftarrow$ ① Distribute

$-6 + 1.5n + 2.8$

$1.5n - 6 + 2.8$

$1.5n - 3.2$

\leftarrow ② Group like terms

\leftarrow ③ Combine like terms

⑩ $(c-4)+(3c+9)$

$c-4+3c+9 \leftarrow$ ① Remove parentheses

$c+3c-4+9 \leftarrow$ ② Group like terms

$4c+5$

\leftarrow ③ Combine like terms

⑪ $\frac{2}{5}(d-10) - \frac{2}{3}(d+6)$

$\frac{2}{5}d - \frac{2}{5}\left(\frac{10}{1}\right) - \frac{2}{3}(d) - \frac{2}{3}\left(\frac{6}{1}\right)$ ① distribute

$\frac{2}{5}d - 4 - \frac{2}{3}d - 4$

② group like terms

$\frac{2}{5}d - \frac{2}{3}d - 4 - 4$

③ combine like terms

$-\frac{4}{15}d - 8$

$\frac{2}{5}d - \frac{2}{3}d = \frac{4d}{15}$

$-\frac{4}{15}d - 8$

Ch. 3 Review (cont. pg. 3)

⑫ $\frac{2b+8}{2 \quad 2}$ ① divide by the coefficient

$2(b+4)$ ② Remember to put the factor in front of the parentheses.

⑬ $\frac{1}{4}y + \frac{3}{8}$

① Divide by the coefficient

$\frac{3}{8} \div \frac{1}{4} = \frac{3}{2} = 1\frac{1}{2}$
 K C F

$\frac{1}{4}(y + 1\frac{1}{2})$

② Remember to put to factor in front of the parentheses.

⑭ $1.7j - 3.4$

$\begin{array}{r} -x \ 2 \\ 1.7 \overline{) 3.4} \\ \underline{-3.4} \\ 0 \end{array}$

$1.7(j-2)$

⑮ $-5p + 20$

$-5(p-4)$

⑯ $p - 3 = -4$

$p = -1$

$\checkmark -1 - 3 = -4$

undo -3 by adding +3

Ch.3 Review pg. 4

17

$$6 + q = 1$$
$$q = -5$$

undo +6 by subtracting 6

$$\checkmark 6 + (-5) = 1$$

18

$$-2 + j = -22$$
$$j = -20$$

undo -2 by adding 2

$$\checkmark -2 + (-20) = -22$$

19

$$b - 19 = -11$$
$$b = 8$$

undo -19 by adding 19

$$\checkmark 8 - 19 = -11$$

20

$$n + \frac{3}{4} = \frac{1}{4}$$

undo $+\frac{3}{4}$ by subtracting $\frac{3}{4}$

$$\checkmark -\frac{1}{2} + \frac{3}{4} = \frac{1}{4}$$
$$-\frac{2}{4} + \frac{3}{4} = \frac{1}{4}$$

$$n = -\frac{2}{4}$$
$$n = -\frac{1}{2}$$

simplify

21

$$v - \frac{5}{6} = -\frac{7}{8}$$

undo $-\frac{5}{6}$ by adding $\frac{5}{6}$

$$\frac{-7}{8} \cdot \frac{3}{3} = \frac{-21}{24}$$
$$+\frac{5}{6} \cdot \frac{4}{4} = \frac{20}{24}$$
$$\frac{1}{24}$$

$$v = \frac{1}{24}$$

$$\checkmark \frac{1}{24} - \frac{5}{6} = -\frac{7}{8}$$

$$\frac{1}{24} - \frac{20}{24} = \frac{-21}{24}$$

Ch. 3 Review p.5

22 $t - 3.7 = 1.2$ undo -3.7 by adding 3.7 ✓ $4.9 - 3.7 = 1.2$
 $t = 4.9$

23 $l + 15.2 = -4.5$ get rid of $+15.2$ by subtracting 15.2 ✓ $-19.7 + 15.2 = -4.5$
 $l = -19.7$

24 $\frac{x}{3} = -8.3$ undo $\div 3$ by $\times 3$ ✓ $\frac{-24}{3} = -8$
 $x = -24$

25 $-7 = \frac{y}{7}$ undo $\div 7$ by $\times 7$ ✓ $-7 = \frac{-49}{7}$
 $-49 = y$

26 $-\frac{z}{4} = -\frac{3}{4}$ undo $\div (-4)$ by $\times (-4)$ ✓ $\frac{3}{-4} = -\frac{3}{4}$
 $z = +12$ $z = 3$

27 $-\frac{w}{20} = -2.5$ undo $\div 20$ by $\times 20$ on EACH SIDE ✓ $\frac{+50}{-20} = -2.5$
 $w = +50$

28 $4x = -8$ undo $\times 4$ by \div by 4 ✓ $4(-2) = -8$
 $x = -2$

Ch. 3 Review (p. 6)

(29) $\frac{-10}{2} = \frac{2y}{2}$ Undo $\times 2$ by $\div 2$ on EACH SIDE $\checkmark -10 = 2(-5)$

$-5 = y$

(30) $\frac{-5.4z}{-5.4} = \frac{-32.4}{-5.4}$ Undo $\times (-5.4)$ by $\div (-5.4)$ on Each Side $\checkmark -5.4(6) = -32.4$

$z = 6$

$\begin{array}{r} -5.4 \overline{) -32.4} \\ \underline{32.4} \\ 0 \end{array}$

$\begin{array}{r} -5.4 \\ \times 6 \\ \hline -32.4 \end{array}$

(31) $\frac{-6.8w}{-6.8} = \frac{3.4}{-6.8}$ Undo $\times (-6.8)$ by $\div (-6.8)$ on Both Sides $\checkmark -6.8(-0.5) = 3.4$

$w = -0.5$

$\begin{array}{r} \times \times .5 \\ -6.8 \overline{) 3.40} \\ \underline{340} \\ 0 \end{array}$

$\begin{array}{r} 4 \\ \times 6.8 \\ \hline 340 \end{array}$

(32) $t = \text{total temperature change}$

$\begin{array}{r} -3.2 \\ \times 5 \\ \hline -16 \end{array}$ $\frac{5}{1} \cdot \frac{t}{5} = (-3.2^\circ\text{F} \times 5)$ $t = -16^\circ\text{F}$

(33) $\frac{-2c + 6}{-6} = \frac{-8}{-6}$ ① undo $+6$ by -6

$\frac{-2c}{-2} = \frac{-14}{-2}$ ② undo $\times (-2)$ by $\div (-2)$

$c = 7$

\checkmark $\begin{array}{l} -2(7) + 6 = -8 \\ -14 + 6 = -8 \end{array}$

Ch. 3 Review (p 7)

$$(34) \quad 3(3w-4) = -20$$

$$3(3w) - 3(4) = -20$$

$$9w - 12 = -20$$

$$9w = -8$$

$$w = -\frac{8}{9}$$

① Distribute

② Undo -12 by $+12$ to BOTH SIDES

③ divide each side by 9 to undo \times by 9

$$\checkmark \quad 3 \left[\frac{3}{1} \left(\frac{-8}{9} \right) - 4 \right] = -20$$

$$3 \cdot \left(\frac{-8}{3} \right) - 12 = -20$$

$$-8 - 12 = -20$$

$$(35) \quad \frac{w}{6} + \frac{5}{8} = -\frac{3}{8}$$

① Undo $+\frac{5}{8}$ by $-\frac{5}{8}$ on BOTH SIDES

$$\frac{w}{6} = -\frac{10}{8} = -2$$

$$\frac{6}{1} \cdot \frac{w}{6} = -2 \cdot 6$$

$$w = -12$$

② Undo \div by 6 by \times by 6

$$\checkmark \quad \frac{-12}{6} + \frac{5}{8} = -\frac{3}{8}$$

$$-2 + \frac{5}{8} = -\frac{3}{8}$$

$$\frac{-16}{8} + \frac{5}{8} = -\frac{3}{8} = -\frac{3}{8}$$

Ch. 3 Review (p. 8)

$$\textcircled{36} \quad -3x - 4.6 = 5.9$$

$$+4.6 \quad +4.6$$

$$\frac{-3x}{-3} = \frac{10.5}{-3}$$

$$x = -3.5$$

① undo -4.6 by $+4.6$

② undo x by -3 by \div by -3 on both sides.

$$\checkmark \quad -3(-3.5) - 4.6 = 5.9$$

$$10.5 - 4.6 = 5.9$$

$$\begin{array}{r} -x \quad 3.5 \\ -3 \overline{) 10.5} \\ \underline{9} \\ 15 \end{array}$$

$$-3.5$$

$$x - 3$$

$$10.5$$

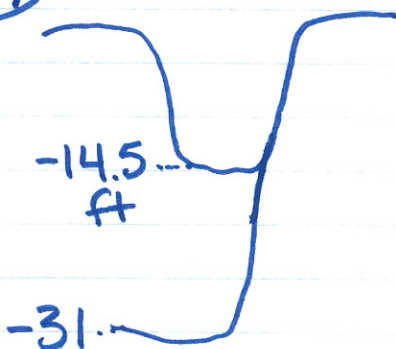
$$10.5$$

$$-4.6$$

$$5.9$$

③⑦

$y = \#$ of years



$$\frac{-14.5}{-1.5} - 1.5y = \frac{-31.0}{-1.5}$$

$$-1.5y = -16.5$$

$$\frac{-1.5y}{-1.5} = \frac{-16.5}{-1.5}$$

$$y = 11 \text{ years}$$

$$\begin{array}{r} \times 11 \\ 1.5 \overline{) -16.5} \\ \underline{15} \\ 15 \end{array}$$