Solve the literal equations for the indicated value.

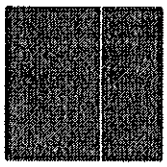
22. $2(d - x) = \frac{y}{3}$ for x.

23. $\frac{3z-y}{w} = y^2$ for z.

24. Solve for the value of b.

$\frac{1}{2}a + 3 + \frac{3}{2}a = 7$ and $4b + 14 = a + 20$

25. Solve for the perimeter of the square.



8x-10

6x

1. {5}
2. {18}
3. {3.5}
4. {6}
5. {4}
6. {-2}
7. $\left\{\frac{39}{2}\right\}$
8. {1}
9. $\left\{\frac{34}{3}\right\}$
10. {20}
11. { }
12. {0}
13. {5}
14. $\left\{\frac{7}{10}\right\}$
15. {10}
16. ≈3.5 hours
17. Yes. Your monthly payment will only by $82.
18. Width: 8 units; length: 11 units.
19. $x = \frac{13}{4}$ ~~in; width 38/5 inches, length 39/4 inches~~ 9/2 in, 19/2 in, 27/2 in
20. Yes, the subtraction property of equality was used.
21. No; the distributive property was used incorrectly.
22. $x = -\frac{y}{6} + 4d$ $x = -\frac{y}{6} + d$
23. $z = \frac{wy^2+y}{3}$
24. {2}
25. 120 units

Chapter 1 Review Quiz 2

1. $5.8 + 3.5(2-4) = 9.3$

$10[5.8 + 3.5(2-4) = 9.3]$

$58 + 35(2-4) = 93$

$58 + 35z - 140 = 93$

$35z - 82 = 93$

$+82 \quad +82$

$\frac{35z}{35} = \frac{175}{35}$

$z = \{5\}$

Remember to check your work.

$5.8 + 3.5(5-4) = 9.3$

$5.8 + 3.5 = 9.3$

$9.3 = 9.3$ ✓

2. $7 = \frac{5}{6}c - 8$

$+8 \quad +8$

$15 = \frac{5}{6}c$

$\cdot\frac{6}{5} \quad \cdot\frac{6}{5}$

$\frac{3}{15} \cdot \frac{6}{5} = c$

$18 = c$

$c = \{18\}$

ck. $7 = \frac{5}{6}(18) - 8$

$7 = 15 - 8$

$7 = 7$ ✓

3. $3.2 + \frac{x}{2.5} = 4.6$

$-3.2 \quad -3.2$

$2.5 \cdot \frac{x}{2.5} = 1.4 \cdot 2.5$

$x = \{3.5\}$

ck. $3.2 + \frac{3.5}{2.5} = 4.6$

$3.2 + 1.4 = 4.6$

$4.6 = 4.6$ ✓

4. $11w - 9 - 7w = 15$

$4w - 9 = 15$

$+9 \quad +9$

$\frac{4w}{4} = \frac{24}{4}$

$w = \{6\}$

ck. $11 \cdot 6 - 9 - 7 \cdot 6 = 15$

$66 - 9 - 42 = 15$

$57 - 42 = 15$

$15 = 15$ ✓

5. $14 + 2(4g - 3) = 40$

$-14 \quad -14$

$\frac{2(4g-3)}{2} = \frac{26}{2}$

$4g - 3 = 13$

$+3 \quad +3$

$\frac{4g}{4} = \frac{16}{4}$

$g = \{4\}$

ck $14 + 2(4 \cdot 4 - 3) = 40$

$14 + 2(16 - 3) = 40$

$14 + 2(13) = 40$

$14 + 26 = 40$

$40 = 40$ ✓

10. $\frac{4}{3}(7 - n) = 12$

$\cdot\frac{3}{4} \qquad \cdot\frac{3}{4}$

$7 - n = 9$

$-7 \quad -7$

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

$n = \{-2\}$

ck $\frac{4}{3}(7 - -2) = 12$

$\frac{4}{3} \cdot 9 = 12$

$12 = 12$ ✓

7. $-4a+3+6a-2=40$

$2a+1=40$

$-1 \quad -1$

$\frac{2a}{2}=\frac{39}{2}$

$a=\{\frac{39}{2}\}$

CK

$-4(\frac{39}{2})+3+6(\frac{39}{2})-2=4$

$-78+3+117-2=40$

$-80+120=40$

$40=40$ ✓

8. $\frac{1}{3}(27x+9)-\frac{1}{4}(16x-8)=10$

$9x+3-4x+2=10$

$5x+5=10$

$-5 \quad -5$

$\frac{5x}{5}=\frac{5}{5}$

$x=\{1\}$

CK

$\frac{1}{3}(27+9)-\frac{1}{4}(16-8)=10$

$\frac{1}{3}(36)-\frac{1}{4}(8)=10$

$12-2=10$

$10=10$ ✓

9. $\frac{3x+2}{6}-4=2$

$+4 \quad +4$

$\frac{3x+2}{6}=6$

$\cdot 6 \quad \cdot 6$

$3x+2=36$

$-2 \quad -2$

$\frac{3x}{3}=\frac{34}{3}$

$x=\{\frac{34}{3}\}$

CK

$\frac{3(\frac{34}{3})+2}{6}-4=2$

$\frac{36}{6}-4=2$

$6-4=2$

$2=2$ ✓

10. $13-4a=-67$
$-13 \quad -13$
$\frac{-4a}{-4}=\frac{-80}{-4}$
$a=\{20\}$

Ck ✓
$13-4(20)=-67$
$13-80=-67$
$-67=-67$ ✓

11. $5(1+4m)=2(3+10m)$
$5+20m=6+20m$
$-20m \quad -20m$
$5=6$ false
$\emptyset$

12. $\frac{14}{5}-\frac{2}{5}(j+10)=\frac{2}{5}(25+j)$
$70-2(j+10)=2(25+j)$
$70-2j-20=50+2j$
$-2j \quad +2j$
$50=50+4j$
$-50 \quad -50$
$\frac{0}{4}=\frac{4j}{4}$
$j=\{0\}$

Ck ✓
$14-\frac{2}{5}(10)=\frac{2}{5}(25)$
$14-4=10$
$10=10$ ✓

13. $16=6.5n-3.3(2n-5)$
$16=6.5n-6.6n+16.5$
$16=-.1n+16.5$
$-16.5 \quad -16.5$
$\frac{-.5}{-.1}=\frac{-.1n}{-.1}$
$5=n$
$n=\{5\}$

Ck ✓
$16=6.5(5)-3.3(2\cdot5-5)$
$16=32.5-3.3(5)$
$32.5-16.5$
$16=16$ ✓

14. $9(4h-6) = 2(-13-2h)$

$36h - 54 = -26 - 4h$

$+4h \quad +4h$

$40h - 54 = -26$

$+54 \quad +54$

$\frac{40h}{40} = \frac{28}{40}$

$h = \{\frac{7}{10}\}$

check: $9(4\cdot\frac{7}{10}-6) = 2(-13-2\cdot\frac{7}{10})$

$9(\frac{14}{5}-6) = 2(-13-\frac{7}{5})$

$9(\frac{14}{5}-\frac{30}{5}) = 2(-\frac{65}{5}-\frac{7}{5})$

$9(-\frac{16}{5}) = 2(-\frac{72}{5})$

$-\frac{144}{5} = -\frac{144}{5}$ ✓

15. $\frac{1}{3}(6x+3) = 2.6x - 5$

$2x+1 = 2.6x - 5$

$-2x \quad -2x$

$1 = .6x - 5$

$+5 \quad +5$

$\frac{6}{.6} = \frac{.6x}{.6}$

$10 = x$

$x = \{10\}$

check: $\frac{1}{3}(6\cdot10+3) = 2.6\cdot10-5$

$\frac{1}{3}(63) = 26-5$

$21 = 21$ ✓

16. $d = r\cdot t$

$t = \frac{d}{r}$

$\frac{60}{46} + \frac{(180-60)}{55}$

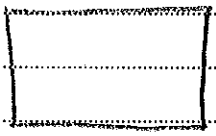
$\frac{120}{55}$

$\frac{4}{3} + \frac{24}{11}$

$\frac{44}{33} + \frac{72}{33} = \frac{116}{33} \approx 3.5$ hours

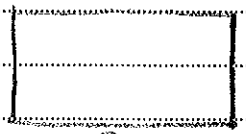
17. $6x + 50 = 542$
$-50 \quad -50$
$\frac{6x}{6} = \frac{492}{6}$
$x = \$82$

yes, your monthly payments would only be $82.

18. 

width 5 units
length 11 units

$2w + 2(2w-5) = 2w + 22$
$2w + 4w - 10 = 2w + 22$
$6w + 2w - 5 = 6w + 11$
$3w - 5 = 6w + 11$
$-w \quad -w$
$2w - 5 = 11$
$+5 \quad +5$
$2w = 16$
$w = 8$

19. 

$x = 9/2$ in.
width $19/2$ in
length $27/2$ in

$2(x+5) + 2(3x) = 46$
$2x + 10 + 6x = 46$
$8x + 10 = 46$
$-10 \quad -10$
$8x = 36$
$x = \frac{9}{2}$

$\frac{13}{5} + \frac{25}{5} \quad \frac{38}{5}$
length $3\frac{13}{4} \quad \frac{39}{4}$

20. yes. the subtraction property of equality was used.
$4x + 7 = 3x - 7$
$-3x \quad -3x$
$x + 7 = -7$ ✓

21. $2(x+2) = \frac{1}{2}(x-8)$
$2x + 4 = \frac{1}{2}x - 4$

NO; the distributive property was used incorrectly.

22. $2(d-x) = \frac{y}{3}$

$\frac{2d - 2x = \frac{y}{3}}{-2d \quad\quad -2d}$

$\frac{-2x = \frac{y}{3} - 2d}{-2}$

$x = -\frac{y}{6} + d$

23. $\frac{3z - y}{w} = y^2$

$3z - y = wy^2$

$+y \quad +y$

$\frac{3z}{3} = \frac{wy^2 + y}{3}$

$z = \frac{wy^2 + y}{3}$ or $\frac{1}{3}wy^2 + \frac{1}{3}y$

24. $\frac{1}{2}a + 3 + \frac{3}{2}a = 7$

$2a + 3 = 7$

$2a = 4$

$a = 2$

$4b + 14 = a + 20$

$4b + 14 = 2 + 20$

$4b + 14 = 22$

$4b = 8$

$b = \{2\}$

25. $8x - 10 = 6x$

$-10 = -2x$

$5 = x$

30×4

120 units