Below are worked out solutions to each question.

Chapter 8 Practice Test

Chapter 8 Practice Test Page 332 Question 1

$$\frac{1}{3}-\frac{3}{2}x=-\frac{1}{6}$$
$$6\times\frac{1}{3}-6\times\frac{3}{2}x=-\frac{1}{6}\times 6$$
$$2-9x=-1$$
$$2-9x-2=-1-2$$
$$-9x=-3$$
$$\frac{-9x}{-9}=\frac{-3}{-9}$$
$$x=\frac{1}{3}$$

The answer is D.

Chapter 8 Practice Test Page 332 Question 2

$$\frac{-5.2}{t}=-3.25$$
$$\frac{-5.2}{t}\times t=-3.25\times t$$
$$-5.2=-3.25t$$
$$\frac{-5.2}{-3.25}=\frac{-3.25t}{-3.25}$$
$$1.6=t$$

The answer is A.

Chapter 8 Practice Test Page 332 Question 3

$$0.45-0.3g=0.85+0.2g$$
$$0.45-0.3g+0.3g=0.85+0.2g+0.3g$$
$$0.45=0.85+0.5g$$
$$0.45-0.85=0.85+0.5g-0.85$$
$$-0.4=0.5g$$
$$-0.4\times 2=0.5g\times 2$$
$$-0.8=g$$

The answer is B.

Chapter 8 Practice Test Page 332 Question 4

By substituting –2 for the value of y in each of the equation, the one that does not have left side equal to the right side would not have –2 as an answer.

The one that does not work is C.

Check:

$$\frac{2y-1}{4} = \frac{5y-4}{8}$$

$$\frac{2y-1}{4} \times 8 = \frac{5y-4}{8} \times 8$$

$$2(2y-1) = 5y-4$$

$$2(2y)-2(1) = 5y-4$$

$$4y-2 = 5y-4$$

$$4y-2-4y = 5y-4-4y$$

$$-2 = y-4$$

$$-2+4 = y-4+4$$

$$2 = y$$

The correct answer for C is $y = 2$, not $y = -2$.

Chapter 8 Practice Test Page 332 Question 5

To solve a linear equation, you isolate the VARIABLE.

Chapter 8 Practice Test Page 332 Question 6

$$2.43 = -0.38v$$

$$\frac{2.43}{-0.38} = \frac{-0.38v}{-0.38}$$

$$-6.39 = v$$

For $2.43 = -0.38v$, the solution expressed to the nearest hundredth is $v = -6.39$.

Chapter 8 Practice Test Page 332 Question 7 & 8 - SKIP

Chapter 8 Practice Test Page 332 Question 9

a) $\dfrac{a+1}{2} = \dfrac{2a-1}{5}$

$\dfrac{a+1}{2} \times 10 = \dfrac{2a-1}{5} \times 10$

$5(a+1) = 2(2a-1)$

$5(a)+5(1) = 2(2a)-2(1)$

$5a+5 = 4a-2$

$5a+5-4a = 4a-2-4a$

$a+5 = -2$

$a+5-5 = -2-5$

$a = -7$

Check:

Left Side $= \dfrac{a+1}{2}$

$= \dfrac{-7+1}{2}$

$= \dfrac{-6}{2}$

$= -3$

Right Side $= \dfrac{2a-1}{5}$

$= \dfrac{2(-7)-1}{5}$

$= \dfrac{-15}{5}$

$= -3$

Left Side = Right Side

The solution, $a = -7$ is correct.

b) $2.8(3d-2) = -12.32$

$2.8(3d) - 2.8(2) = -12.32$

$8.4d - 5.6 = -12.32$

$8.4d - 5.6 + 5.6 = -12.32 + 5.6$

$8.4d = -6.72$

$\dfrac{8.4d}{8.4} = \dfrac{-6.72}{8.4}$

$d = -0.8$

Check:

Left Side $= 2.8(3d-2)$

$= 2.8(3(-0.8)-2)$

$= 2.8(-4.4)$

$= -12.32$

Right Side $= -12.32$

Left Side = Right Side

The solution, $d = -0.8$, is correct.

Chapter 8 Practice Test Page 332 Question 10

a) $-13.9x = 5.7 - 12.5x$

$-13.9x + 12.5x = 5.7 - 12.5x + 12.5x$

$-1.4x = 5.7$

$\frac{-1.4x}{-1.4} = \frac{5.7}{-1.4}$

$x = -4.1$

b) $0.8(2s + 3) = -0.6(5s - 2)$

$0.8(2s) + 0.8(3) = -0.6(5s) - (-0.6)(2)$

$1.6s + 2.4 = -3s + 1.2$

$1.6s + 2.4 + 3s = -3s + 1.2 + 3s$

$4.6s + 2.4 = 1.2$

$4.6s + 2.4 - 2.4 = 1.2 - 2.4$

$4.6s = -1.2$

$\frac{4.6s}{4.6} = \frac{-1.2}{4.6}$

$s = -0.3$

Chapter 8 Practice Test Page 332 Question 11

a) Substitute 15.5 for the value of s.

$\frac{r}{15.5} = 0.1$

$\frac{r}{15.5} \times 15.5 = 0.1 \times 15.5$

$r = 1.55$

The depth of rain would be 1.55 cm in order to have the same amount of precipitation as 15.5 cm of snow.

b) Substitute 2.7 for the value of r.

$\frac{2.7}{s} = 0.1$

$\frac{2.7}{s} \times s = 0.1 \times s$

$2.7 = 0.1s$

$\frac{2.7}{0.1} = \frac{0.1s}{0.1}$

$s = 27$

The depth of snow would be 27 cm in order to have the same amount of precipitation as 2.7 cm of rain.

Chapter 8 Practice Test Page 332 Question 12

Let t represent the number of transactions at the bank.

$$\begin{aligned} 5.95 + 0.75t &= 12.70 \\ 5.95 + 0.75t - 5.95 &= 12.70 - 5.95 \\ 0.75t &= 6.75 \\ \frac{0.75t}{0.75} &= \frac{6.75}{0.75} \\ t &= 9 \end{aligned}$$

Nav made a total of 9 transactions at the bank that month.

Chapter 8 Practice Test Page 333 Question 13

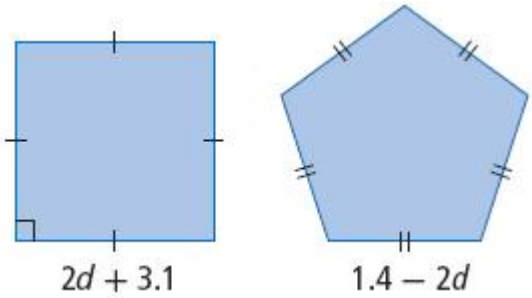
Let h represent the number of hours of service for which both amounts are the same.

$$\begin{aligned} 64.95 + 45h &= 79.95 + 40h \\ 64.95 + 45h - 40h &= 79.95 + 40h - 40h \\ 64.95 + 5h &= 79.95 \\ 64.95 + 5h - 64.95 &= 79.95 - 64.95 \\ 5h &= 15 \\ h &= 3 \end{aligned}$$

It would take 3 h of service time for both to charge the same fee.

Chapter 8 Practice Test Page 333 Question 14

$$\begin{aligned} 4(2d + 3.1) &= 5(1.4 - 2d) \\ 4(2d) + 4(3.1) &= 5(1.4) - 5(2d) \\ 8d + 12.4 &= 7 - 10d \\ 8d + 12.4 + 10d &= 7 - 10d + 10d \\ 18d + 12.4 &= 7 \\ 18d + 12.4 - 12.4 &= 7 - 12.4 \\ 18d &= -5.4 \\ \frac{18d}{18} &= \frac{-5.4}{18} \\ d &= -0.3 \end{aligned}$$



The length of each side of the square can be found by substituting –0.3 for the value of d.

$$\begin{aligned} \text{length} &= 2(-0.3) + 3.1 \\ &= -0.6 + 3.1 \\ &= 2.5 \end{aligned}$$

The perimeter of each shape is 4(2.5), or 10 units.

Chapter 8 Practice Test Page 333 Question 15

a) The error occurs on the second line when the distributive property is applied incorrectly on the left side. Only one term was multiplied by –3.1.

b)
$$\begin{aligned}
-3.1(2n + 3) &= 12.3 \\
-3.1(2n) - 3.1(3) &= 12.3 \\
-6.2n - 9.3 &= 12.3 \\
-6.2n - 9.3 + 9.3 &= 12.3 + 9.3 \\
-6.2n &= 21.6 \\
\frac{-6.2n}{-6.2} &= \frac{21.6}{-6.2} \\
n &= -3.5
\end{aligned}$$

The correct answer for n should be –3.5, rounded to the nearest tenth.