Chapter 2 Practice Test

Chapter 2 Practice Test Page 84 Question 1

Rewrite $\frac{4}{-6}$ in lowest terms.

$\frac{4}{-6} = \frac{-2}{3}$

Choice A:

Rewrite $-\left(\frac{-10}{15}\right)$ in lowest terms.

$-\left(\frac{-10}{15}\right) = \frac{2}{3}$

$\frac{2}{3}$ is not equal to $\frac{-2}{3}$. $-\left(\frac{-10}{15}\right)$ is choice A. So the answer is A.

Chapter 2 Practice Test Page 84 Question 2

Rewrite $-1\frac{5}{6}$ as a decimal.

$-1\frac{5}{6} = -1.8\overline{3}$

Rewrite $-1\frac{7}{8}$ as a decimal.

$-1\frac{7}{8} = -1.875$

Rewrite $-1\frac{4}{5}$ as a decimal.

$-1\frac{4}{5} = -1.8$

Choice A, $-1.\overline{8}$, is less than $-1\frac{5}{6}$.

Choice B, $-1\frac{7}{8}$, is less than $-1\frac{5}{6}$.

Choice C, $-1.8\overline{3}$, is equal to $-1\frac{5}{6}$.

Choice D, $-1\frac{4}{5}$, is greater than $-1\frac{5}{6}$.

So, the answer is D.

Chapter 2 Practice Test Page 84 Question 3

Change each fraction to its decimal equivalent.
Choice A:
$\frac{-17}{50} = -0.34$
Choice B:
$\frac{-9}{25} = -0.36$
Choice C:
$\frac{-7}{20} = -0.35$
Choice D:
$\frac{35}{100} = 0.35$

So, the value between –0.36 and –0.34 is choice C, $\frac{-7}{20} = -0.35$.

Chapter 2 Practice Test Page 84 Question 4

–3.78 – (–2.95) Subtracting –2.95 is the same as adding the opposite of –2.95.
= –3.78 + 2.95
= –0.83
So, the answer is choice B

Chapter 2 Practice Test Page 84 Question 5

Multiply the numerators and multiply the denominators.

$\frac{3}{5} \times \left(-\frac{6}{7}\right) = -\frac{18}{35}$

Choice A:

$-\frac{3}{7} \times \left(\frac{6}{5}\right) = -\frac{18}{35}$

Choice B:

$\frac{3}{-5} \times \frac{6}{7} = -\frac{18}{35}$

Choice C:

$\frac{-3}{5} \times \left(\frac{-6}{-7}\right) = -\frac{18}{35}$

Choice D:

$\frac{-3}{-5} \times \frac{6}{7} = \frac{18}{35}$

$-\frac{18}{35}$ is not equal to $\frac{18}{35}$, so the answer is D.

Chapter 2 Practice Test Page 84 Question 6

To determine which value is the best estimate for $\sqrt{1.6}$, square each number. The one that is closest to 1.6 is the best estimate.

Choice A:

$2.6^2 = 6.76$

Choice B:

$1.3^2 = 1.69$

Choice C:

$0.8^2 = 0.64$

Choice D:

$0.4^2 = 0.16$

Choice B, 1.69, is the closest. So, the answer is B.

Chapter 2 Practice Test Page 84 Question 7

Choice A:

In $\frac{1}{25}$, both the numerator and denominator are perfect squares. $\frac{1}{25}$ can be expressed as the product of two equal rational factors, $\frac{1}{5} \times \frac{1}{5}$. So, $\frac{1}{25}$ is a perfect square.

Choice B:

Rewrite 0.16 as a fraction.

$0.16 = \frac{16}{100}$

In $\frac{16}{100}$, both the numerator and denominator are perfect squares. $\frac{16}{100}$ can be expressed as the product of two equal rational factors, $\frac{4}{10} \times \frac{4}{10}$. So, $\frac{16}{100}$ is a perfect square.

Choice C:

Rewrite 0.9 as a fraction.

$0.9 = \frac{9}{10}$

In $\frac{9}{10}$, the numerator is a perfect square, but the denominator is not a perfect square. So, $\frac{9}{10}$ cannot be a perfect square.

The answer is C.

Chapter 2 Practice Test Page 84 Question 8

Find the side length of the square, by finding the square root of 1.44.

$\sqrt{1.44} = 1.2$

The side length of the square is 1.2 m.

To find the perimeter, multiply the side length by 4.

$1.2 \times 4 = 4.8$

The perimeter of the square is 4.8 m.

Chapter 2 Practice Test Page 84 Question 9

Rewrite $-3\frac{5}{11}$ as a decimal.

$-3\frac{5}{11} = -3.\overline{45}$

Since $-3.\overline{45}$ is less than –3.4545, $-3\frac{5}{11}$ would be to the left of –3.4545 on a number line.

Chapter 2 Practice Test Page 84 Question 10

Example: any integer can be written as a quotient of two integers by making the integer the dividend and the number, 1, the divisor.

Example: $9 = \frac{9}{1}$

Chapter 2 Practice Test Page 84 Question 11

To arrange the numbers in descending order, rewrite each fraction as its decimal equivalent. Then, compare their value by locating them on a number line.

$\frac{19}{20} = 0.95$

$\frac{9}{10} = 0.9$

$\frac{9}{-10} = -0.9$

The numbers in descending order are $\frac{19}{20}$, 0.94, $\frac{9}{10}$, $\frac{9}{-10}$, –1.2, $-1.\overline{2}$.

Chapter 2 Practice Test Page 84 Question 12

Between –2 and –3 there would be 5 fractions with a denominator of 6.

$-2\frac{1}{6}, -2\frac{2}{6}, -2\frac{3}{6}, -2\frac{4}{6}, -2\frac{5}{6}$

Three of these fractions can be rewritten in lowest terms.

$-2\frac{2}{6} = -2\frac{1}{3}$

$-2\frac{3}{6} = -2\frac{1}{2}$

$-2\frac{4}{6} = -2\frac{2}{3}$

Chapter 2 Practice Test Page 84 Question 13

a) $1\frac{4}{5} - 2\frac{2}{3}$ Rewrite the mixed numbers as improper fractions.

$= \frac{9}{5} - \frac{8}{3}$ A common denominator of 5 and 3 is 15.

$= \frac{27}{15} - \frac{40}{15}$ Subtracting $\frac{40}{15}$ is the same as adding the opposite of $\frac{40}{15}$.

$= \frac{27}{15} + \frac{-40}{15}$ Add the numerators.

$= -\frac{13}{15}$

b) $-3.21 + 1.84$

$= -1.37$ Line up the decimals.

c) $\frac{5}{8} \div \left(-\frac{11}{12}\right)$ Multiply by the reciprocal of the divisor.

$= \frac{5}{8} \times \frac{-12}{11}$ Multiply the numerators and multiply the denominators.

$= \frac{-60}{88}$ Rewrite in lowest terms.

$= -\frac{15}{22}$

d) $-2\frac{5}{7}\left(-3\frac{1}{2}\right)$ Rewrite the mixed numbers as improper fractions.

$= \frac{-19}{7} \times \frac{-7}{2}$ Multiply the numerators and multiply the denominators.

$= \frac{133}{14}$ Change the improper fraction to a mixed number in lowest terms.

$= 9\frac{1}{2}$

e) $-3.66 \div (-1.5)$

$= 2.44$

f) $-\frac{5}{6} + \left(-\frac{1}{12}\right)$ A common denominator of 6 and 12 is 12.

$= \frac{-10}{12} + \frac{-1}{12}$ Add the numerators.

$= -\frac{11}{12}$

Chapter 2 Practice Test Page 84 Question 14

Since Donovan Bailey beat Frankie Fredericks that means that Fredericks' time was $\frac{5}{100}$ greater than Bailey's time. To find Fredericks' time, change $\frac{5}{100}$ into its decimal equivalent.

$\frac{5}{100} = 0.05$
Add 0.05 to 9.84.
$0.05 + 9.84 = 9.89$
Fredericks' time was 9.89 s.

Chapter 2 Practice Test Page 85 Question 15

The sum of a number and its opposite is zero. So, the average would be zero.
Examples:
$[1.2 + (-1.2)] \div 2$
$= 0 \div 2$
$= 0$
$\left(-\frac{5}{8} + \frac{5}{8}\right) \div 2$
$= 0 \div 2$
$= 0$

Chapter 2 Practice Test Page 85 Question 16

Rewrite 31.36 as a fraction.
$31.36 = \frac{3136}{100}$
In $\frac{3136}{100}$, both the numerator and denominator are perfect squares. $\frac{3136}{100}$ can be expressed as the product of two equal rational factors, $\frac{56}{10} \times \frac{56}{10}$. So, $\frac{3136}{100}$ is a perfect square.

Chapter 2 Practice Test Page 85 Question 17
a) To find the number whose square root is 6.1, square 6.1.
$6.1^2 = 37.21$
$\sqrt{37.21} = 6.1$

b) $\sqrt{0.1369} = 0.37$

c) $\sqrt{7} \approx 2.645\,751\,311$
$\sqrt{7} = 2.65$ (rounded to the nearest hundredth)

Chapter 2 Practice Test Page 85 Question 18

a) The perimeter of the shape is made up of 16 side lengths of the squares. To find the side length of one square, divide 40 cm by 16.
$40 \div 16 = 2.5$
The side of each square is 2.5 cm.
The area of one square is found by squaring 2.5.
$2.5^2 = 6.25$
The area of one square is 6.25 cm^2.
To find the area of 10 squares, multiply 6.25 cm^2 by 10.
$6.25 \times 10 = 62.5$
The area of the shape is 62.5 cm^2.

b) To find the area of one square, divide 75 cm^2 by 10.
$75 \div 10 = 7.5$
The area of one square is 7.5 cm^2.
To find the side length of one square, find the square root of 7.5
$\sqrt{7.5} \approx 2.7$
The side length of one square is 2.7 cm.
To find the perimeter of the shape, multiply 2.7 cm by 16.
$2.7 \times 16 = 43.2$
The perimeter of the shape is 43.2 cm.

Chapter 2 Practice Test Page 85 Question 19

To find how much Ron received for each share, multiply 75 by $15.64.
$75 \times 15.64 = 1173$
Ron received $1173 when he sold his shares. This represents a loss of $260.25, so add $1173 to $260.25
$1173 + 260.25 = 1433.25$
Divide $1433.25 by 75 to find the cost per share when Ron bought the shares.
$1433.25 \div 75 = 19.11$
Ron paid $19.11 per share when he bought the shares.

Chapter 2 Practice Test Page 85 Question 20

a) Example: the sum must be 1 because no other elements make up a quarter's content.

b) $\frac{11}{500} + \frac{19}{500} + \frac{47}{50}$

$= \frac{11}{500} + \frac{19}{500} + \frac{470}{500}$ A common denominator of 500 and 50 is 500.

$= \frac{500}{500}$ Add the numerators.

$= 1$

c) Divide the mass of the steel by the sum of the masses of the nickel and the copper.
Rewrite each fraction as a decimal.

$\frac{11}{500} = 0.022$ (the mass of nickel)

$\frac{19}{500} = 0.038$ (the mass of copper)

$\frac{470}{500} = 0.94$ (the mass of steel)

The sum of the masses of the nickel and copper is $0.022 + 0.038 = 0.06$.

$0.94 \div 0.06 = 15.\overline{6}$

The mass of the steel is $15.\overline{6}$ times as great as the combined mass of the nickel and the copper.

d) Find the mass of copper in one quarter by multiplying 4.4 g by $\frac{19}{500}$.

Rewrite $\frac{19}{500}$ as a decimal. $\frac{19}{500} = 0.038$

$0.038 \times 4.4 = 0.1672$

The mass of copper in one quarter is 0.1672 g.

To find the mass of copper in 40 quarters, multiply 0.1672 by 40. $0.1672 \times 40 = 6.688$

The mass of copper in 40 quarters is 6.688 g.

Find the mass of nickel in one quarter by multiplying 4.4 by $\frac{11}{500}$.

Rewrite $\frac{11}{500}$ as a decimal. $\frac{11}{500} = 0.022$

$0.022 \times 4.4 = 0.0968$

The mass of nickel in one quarter is 0.0968 g.

To find the mass of nickel in 40 quarters, multiply 0.0968 by 40. $0.0968 \times 40 = 3.872$

The mass of nickel in 40 quarters is 3.872 g.

To find how much greater the mass of copper is than the mass of nickel, subtract 3.872 g from 6.688 g. $6.688 - 3.872 = 2.816$

The difference in mass is 2.816 g.