Student: _____ **Date:** _____	**Instructor:** CHRISTOPHER FOLEY **Course:** MGF1107 SURVEY OF MATH W 6:30 PM 9:15 PM CHRISTOPHER FOLEY 586325	**Assignment:** Unit 1 - Chapter 12 Review

1. Complete the following sentence.

A number that can be represented as a quotient of integers with denominator not 0 is called a(n) _____.

Choose the correct answer below.

- **A.** whole number
- **B.** irrational number
- **C.** rational number
- **D.** natural number

2. Complete the following sentence.

A rational number is in lowest terms if its numerator and denominator have _____ as their greatest common factor.

Choose the correct answer below.

- **A.** 5
- **B.** 2
- **C.** 0
- **D.** 1

3. Complete the following sentence.

To divide $\frac{6}{13}$ by $\frac{3}{5}$, multiply _____ by the reciprocal of the divisor. That reciprocal is _____.

To divide $\frac{6}{13}$ by $\frac{3}{5}$, multiply (1) _____ by the reciprocal of the divisor. That reciprocal is (2) _____

(1)
- $\frac{3}{5}$
- $\frac{13}{6}$
- $\frac{5}{3}$
- $\frac{6}{13}$

(2)
- $\frac{13}{6}$.
- $\frac{3}{5}$.
- $\frac{5}{3}$.
- $\frac{6}{13}$.

4. Write the fraction in lowest terms.

$\frac{9}{12}$

$\frac{9}{12}$ = _____

(Simplify your answer. Type an integer or a fraction.)

5. Write the fraction in lowest terms.

$-\frac{20}{24}$

$-\frac{20}{24} =$ _____ (Simplify your answer. Type an integer or a fraction.)

6. Find two fractions equivalent to the following fraction.

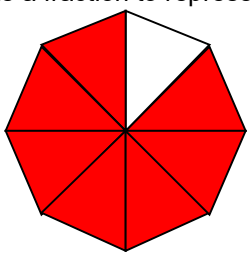
$\frac{10}{11}$

Enter the numerator.

$\frac{10}{11} = \frac{\text{_____}}{33}$

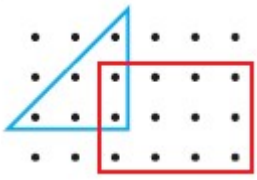
$\frac{10}{11} = \frac{\text{_____}}{66}$

7. Write a fraction to represent the shaded part of the figure.



The fraction representing the shaded part is _____.

8. Write a fraction in lowest terms that represents the region described in parts **(a)-(d)**.



(a) the dots in the rectangle as a part of the dots in the entire figure

The fraction _____ represents the dots in the rectangle as a part of the dots in the entire figure.

(b) the dots in the triangle as a part of the dots in the entire figure

The fraction _____ represents the dots in the triangle as a part of the dots in the entire figure.

(c) the dots in the rectangle as a part of the dots in the union of the triangle and the rectangle

The fraction _____ represents the dots in the rectangle as a part of the dots in the union of the triangle and the rectangle.

(d) the dots in the intersection of the triangle and the rectangle as a part of the dots in the union of the triangle and the rectangle

The fraction _____ represents the dots in the intersection of the triangle and the rectangle as a part of the dots in the union of the triangle and the rectangle

9. Find the sum and write it in lowest terms.

$\frac{1}{4} + \frac{1}{4}$

$\frac{1}{4} + \frac{1}{4} =$ _____
(Simplify your answer. Type an integer or a fraction.)

10. Add and simplify.

$\frac{1}{4} + \frac{1}{10}$

$\frac{1}{4} + \frac{1}{10} =$ _____
(Type a whole number or a fraction.)

11. Perform the indicated operation. If possible, reduce the answer to its lowest terms.

$\frac{1}{11} - \frac{2}{5}$

$\frac{1}{11} - \frac{2}{5} =$ _____ (Type an integer or a simplified fraction.)

12. Subtract.

$\frac{74}{75} - \frac{26}{35}$

$\frac{74}{75} - \frac{26}{35} =$ _____
(Simplify your answer. Type an integer or a fraction.)

13. Multiply.

$\frac{2}{7} \cdot \frac{1}{7}$

The answer is _____.
(Simplify your answer. Type an integer or a fraction.)

14. Multiply.

$-\frac{6}{11} \cdot \left(-\frac{7}{12}\right)$

$-\frac{6}{11} \cdot \left(-\frac{7}{12}\right) =$ _____
(Simplify your answer. Type an integer or a fraction.)

15. Divide and simplify.

$\frac{9}{7} \div \frac{36}{7}$

The answer is

$\frac{9}{7} \div \frac{36}{7} =$ _____.
(Simplify your answer.)

16. Perform the indicated operations and express answers in lowest terms. Use the order of operations as necessary.

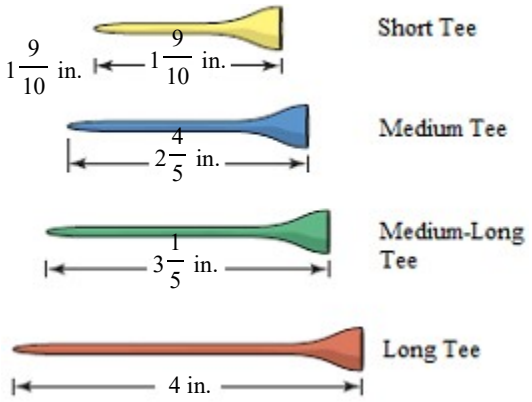
$-\frac{4}{35} \div \left(-\frac{2}{5}\right)$

$-\frac{4}{35} \div \left(-\frac{2}{5}\right) =$ _____ (Simplify your answer. Type an integer or a fraction.)

17. A hardware store sells a 40-piece socket wrench set. For a certain project, Norman is using a wrench with a socket of $\frac{3}{4}$ in and another wrench with a socket of $\frac{11}{16}$ in. What is the difference between these measures?

The difference is _____ in.
(Type an integer or a simplified fraction.)

18. A wooden golf tee manufacturing company has created the Professional Tee system shown in the figure to the right.



(a) Find the difference between the lengths of the Medium-Long Tee and the Short Tee.

(b) How much longer is the Long Tee than the Short Tee?

(a) What is the difference between the lengths of the Medium-Long Tee and the Short Tee?

_____ in. (Simplify your answer. Type an integer, proper fraction, or mixed number.)

(b) How much longer is the Long Tee than the Short Tee?

_____ in. (Simplify your answer. Type an integer, proper fraction, or mixed number.)

19. A cake recipe calls for $3\frac{1}{2}$ cups of sugar. A caterer has $17\frac{3}{4}$ cups of sugar on hand. How many cakes can he make?

The caterer can make _____ cake(s). (Type a whole number.)

20. Find the rational number halfway between the two given rational numbers.

$\frac{1}{4}, \frac{5}{8}$

The number _____ is halfway between $\frac{1}{4}$ and $\frac{5}{8}$.
(Type an integer or a simplified fraction.)

21. Decide whether the rational number would yield a repeating or a terminating decimal.

$\frac{13}{30}$

The rational number $\frac{13}{30}$ would yield a (1) _____ decimal.

(1) ○ terminating
○ repeating

22. Decide whether the rational number would yield a repeating or a terminating decimal.

$\frac{3}{4}$

The rational number $\frac{3}{4}$ would yield a (1) _____ decimal.

(1) ○ repeating
○ terminating

23. Decide whether the rational number would yield a repeating or a terminating decimal.

$\frac{22}{55}$

Choose the correct choice below.

○ terminating
○ repeating

24. Write the fraction as a decimal.

$\frac{1}{4}$

$\frac{1}{4}$ = _____

25. Convert the rational number into either a repeating or a terminating decimal. Use a calculator.

$\frac{9}{32}$

$\frac{9}{32}$ = _____ (Type an exact answer.)

26. Convert the following rational number into either a repeating or a terminating decimal. Use a calculator if allowed.

$\frac{94}{99}$

Choose the correct answer below.

○ **A.** $94.\overline{94}$
○ **B.** 0.94
○ **C.** $99.\overline{94}$
○ **D.** $0.\overline{94}$

27. Convert the following rational number into either a repeating or a terminating decimal. Use a calculator if allowed.

$\frac{4}{7}$

Choose the correct answer below.

- **A.** $0.\overline{571428}$
- **B.** $5.\overline{714285}$
- **C.** 5.714285
- **D.** 0.571428

28. Identify the number as rational or irrational.

$\frac{5}{11}$

The number $\frac{5}{11}$ is (1) _____

(1)
- rational.
- irrational.

29. Determine whether the number is rational or irrational.
$\sqrt{49}$

Is $\sqrt{49}$ a rational or an irrational number?

- Rational
- Irrational

30. Identify the following number as rational or irrational.

1.774

Choose the correct answer below.

- it is an irrational number.
- it is a rational number.

31. Identify the number as rational or irrational.

0.345334533345...

Is 0.345334533345... rational or irrational?

- Irrational
- Rational

32. Use a calculator to find a rational decimal approximation for the irrational number.

$\sqrt{29}$

$\sqrt{29} \approx$ _____ (Round to four decimal places as needed.)

33. Use a calculator to find a rational decimal approximation for the irrational number.

$\sqrt{40.8}$

$\sqrt{40.8} \approx$ _____ (Round to four decimal places as needed.)

34. Use a calculator to find a rational decimal approximation for the irrational number.

$\sqrt{809}$

$\sqrt{809} \approx$ _____ (Round to four decimal places as needed.)

35. Simplify the expression. Then use a calculator to approximate the expression.

$\sqrt{63}$

$\sqrt{63} =$ _____
(Simplify your answer. Type an exact answer, using radicals as needed.)

What is the approximate value of $\sqrt{63}$?
_____
(Round to four decimal places as needed.)

36. Simplify the expression. Then use a calculator to approximate the expression.

$\sqrt{50}$

$\sqrt{50} =$ _____
(Simplify your answer. Type an exact answer, using radicals as needed.)

What is the approximate value of $\sqrt{50}$?
_____
(Round to four decimal places as needed.)

37. Simplify the expression. Then, use a calculator to approximate both the given expression and the simplified expression. (Both should be the same.)

$\sqrt{507}$

$\sqrt{507} =$ _____ (Simplify your answer. Type an exact answer, using radicals as needed.)

What is the approximate value of $\sqrt{507}$?

_____ (Round to four decimal places as needed.)

38. Subtract. Simplify by collecting like radical terms, if possible.
$4\sqrt{3} - \sqrt{3}$

The answer is _____.

39. Add. Simplify by collecting like radical terms, if possible.

$6\sqrt{8} + 2\sqrt{2}$

$6\sqrt{8} + 2\sqrt{2} =$ _____

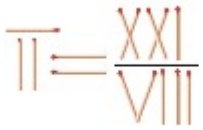
(Type an exact answer, using radicals as needed.)

40. Perform the indicated operation.

$-\sqrt{27}+\sqrt{75}$

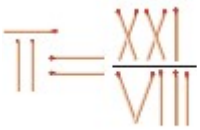
$-\sqrt{27}+\sqrt{75}=$ _____ (Type an exact answer, using radicals as needed.)

41. Deal with π, ϕ, or e. Move one matchstick to make the equation approximately true.



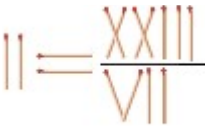
Choose the correct choice below.

A.

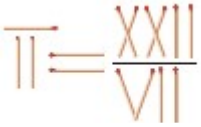


B.

C.



D.



42. Find the first eight digits in the decimal for $\frac{355}{113}$. Compare the result to the decimal for π given below. What do you notice?

$\pi \approx 3.14159265358979323846264338327 9$

The decimal form of $\frac{355}{113}$ is _____ (Round to seven decimal places.)

Compare the result to the given decimal for π. What do you notice?

Choose the correct answer below.

- **A.** The first seven digits are the same, but the last digit is different.
- **B.** The first three digits are the same, but the last five digits are different.
- **C.** The first six digits are the same, but the last two digits are different.
- **D.** All eight digits are the same.

43. In some literature, the Golden Ratio is defined to be the reciprocal of $\frac{1+\sqrt{5}}{2}$, which is $\frac{2}{1+\sqrt{5}}$. Use a calculator to find a decimal approximation for $\frac{2}{1+\sqrt{5}}$, and compare it to 1.618033988749894848204586834365, an approximation of ϕ. What can be observed?

Choose the correct answer below.

- **A.** The decimal digits agree. The units digits differ by 1.
- **B.** The decimal digits differ by 1. The units digits agree.
- **C.** The decimal digits differ by 1. The units digits differ by 2.
- **D.** The decimal digits differ by 1. The units digits differ by 1.

44. Indicate the number of significant digits in the following number.

920,180

The number 920,180 has _____ significant digits.

45. Indicate the number of significant digits in the following number.

0.0075

The number 0.0075 has _____ significant digits.

46. Indicate the number of significant digits in the following number.

5,700

The number 5,700 has _____ significant digits.

47. Indicate the number of significant digits in the following number.

319,000

The number 319,000 has _____ significant digits.

48. Find the greatest possible error of the following measurement.

$11\frac{1}{32}$ in

The greatest possible error is _____. (Simplify your answer.)

49. Find the greatest possible error of the following measurement.

$10\frac{1}{16}$ in

The greatest possible error is _____. (Simplify your answer.)

50. Find the greatest possible error of the following measurement.

5.86 cm

The greatest possible error is _____ cm. (Type a whole number or a decimal.)

51. Find the greatest possible error of the following measurement.

8.44 mi

The greatest possible error is _____ mi. (Type a whole number or a decimal.)

52. The blueprint for a part specifies a measurement of 45.6 cm. An actual part has a measurement of 46.8 cm. Find the absolute error, relative error, and percent error.

The absolute error is _____ cm. (Type a whole number or a decimal.)

The relative error is _____. (Round to four decimal places as needed.)

The percent error is _____%. (Round to the nearest hundredth as needed.)

53. A blueprint for the gasoline tank of an industrial lawn mower specifies that it holds 47.15 L of gasoline. Upon close measurement, an actual tank is found to hold 47.55L of gasoline. Find the absolute error, relative error, and percent error.

The absolute error is _____ L. (Type a whole number or a decimal.)

The relative error is _____. (Round to four decimal places as needed.)

The percent error is _____%. (Round to the nearest hundredth as needed.)

54. Add. Give the sum using the appropriate precision.

12.86 m, 13.5 m, 182.3 m, 4.932 m

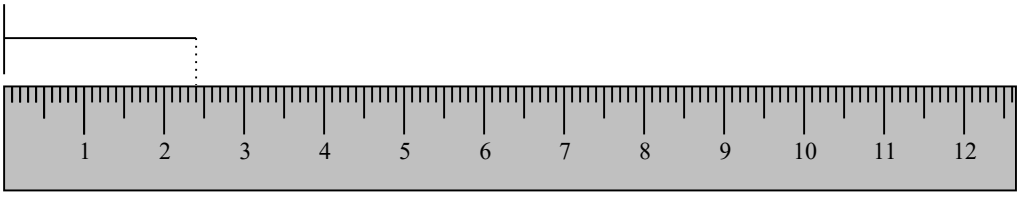
The sum of 12.86 m, 13.5 m, 182.3 m, and 4.932 m, rounded to the proper degree of precision, is _____ m. (Simplify your answer. Type an integer or a decimal.)

55. Give the product using the appropriate number of significant digits.

(195 m)(35 m)(107 m)

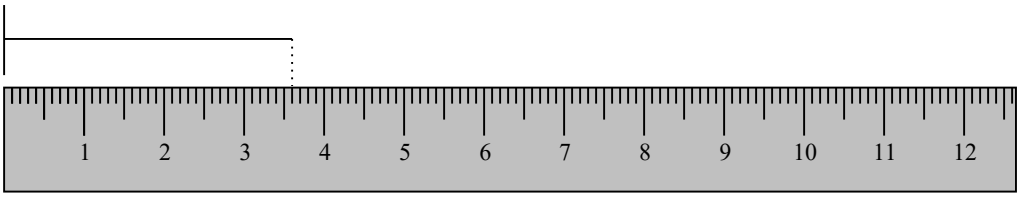
(195 m)(35 m)(107 m) = _____ m^3

56. Measure the line segment to the nearest millimeter. Express the answer in centimeters.



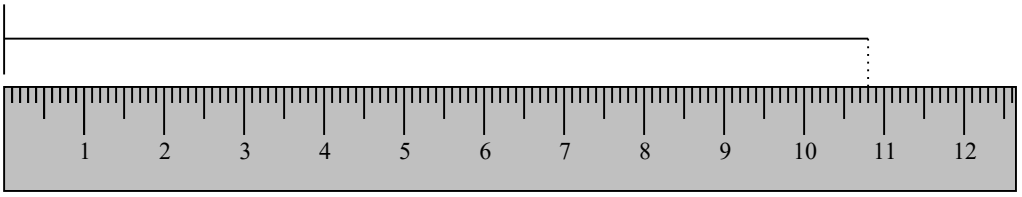
_____ cm (Type a whole number or a decimal.)

57. Measure the line segment to the nearest millimeter. Express the answer in centimeters.



_____ cm (Type a whole number or a decimal.)

58. Measure the line segment to the nearest millimeter. Express the answer in centimeters.



_____ cm (Type a whole number or a decimal.)

59. Find the distance between the pair of points.

7.6 cm and 14.2 cm

The distance is _____ cm. (Type a whole number or a decimal.)

60. Find the midpoint between the pair of points.

2.8 cm and 6.4 cm

The midpoint is _____ cm. (Type a whole number or a decimal.)

61. Find the midpoint between the pair of points.

5.5 cm and 9.3 cm

The midpoint is _____ cm. (Type a whole number or a decimal.)

1. C. rational number

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2. D. 1

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3. (1) $\frac{6}{13}$

(2) $\frac{5}{3}$.

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4. $\frac{3}{4}$

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5. $-\frac{5}{6}$

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6. 30

60

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7. $\frac{7}{8}$

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8. $\frac{1}{2}$

$\frac{1}{4}$

$\frac{3}{4}$

$\frac{1}{8}$

---

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

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10. $\frac{7}{20}$

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11. $-\frac{17}{55}$

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12. $\frac{128}{525}$

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13. $\frac{2}{49}$

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14. $\frac{7}{22}$

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15. $\frac{1}{4}$

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16. $\frac{2}{7}$

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17. $\frac{1}{16}$

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18. $1\frac{3}{10}$

$2\frac{1}{10}$

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19. 5

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20. $\frac{7}{16}$

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21. (1) repeating

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22. (1) terminating

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23. terminating

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24. 0.25

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25. 0.28125

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26. D. $0.\overline{94}$

27. A. $0.\overline{571428}$

28. (1) rational.

29. Rational

30. it is a rational number.

31. Irrational

32. 5.3852

33. 6.3875

34. 28.4429

35. $3\sqrt{7}$

    7.9373

36. $5\sqrt{2}$

    7.0711

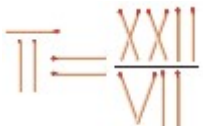
37. $13\sqrt{3}$

    22.5167

38. $3\sqrt{3}$

39. $14\sqrt{2}$

40. $2\sqrt{3}$

41. 

D.

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42. 3.1415929

A. The first seven digits are the same, but the last digit is different.

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43. A. The decimal digits agree. The units digits differ by 1.

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44. 5

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45. 2

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46. 2

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47. 3

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48. $\frac{1}{64}$

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49. $\frac{1}{32}$

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50. 0.005

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51. 0.005

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52. 1.2

0.0263

2.63

---

53. 0.4

0.0085

0.85

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54. 213.6

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55. 730,000

56. 2.4

57. 3.6

58. 10.8

59. 6.6

60. 4.6

61. 7.4