Summer 2021 Math Packet
(For Students who completed 6th Core math
during the 2020 – 2021 school year)

Student's Name: _____

Parent's Signature upon Completion: _____

The purpose of this packet is to review the concepts you learned in your 6th grade math course and to keep your mathematical mind fresh! Please work on the packet <u>throughout the summer and **not all in one sitting**</u>.

This packet is due on August 31, 2021 and may be submitted electronically or a hard copy. This summer packet will count as a project grade for the 1st quarter. Each day the packet is late, 10 points will be deducted from your score and will not be accepted after August 31. **No Extra-Credit** will be awarded if it is turned-In before the due date.

Name_____

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Solve.

1) Find the sum of 453 and 6185.

2) Find the total of 83, 42 ,3, 11, and 333.

3) What is 435 increased by 67?

Subtract. Check by adding.

4) 9675 - 4321

5) 9967 - 3431

6) 91 -28

7) 52 - 46

Determine the place value of the digit 3 in the whole number.

8) 2530

9) 30,542

10) 25,304,168

Multiply.

11) 653 × 4

12) 3025 × 3

13) 89,594 × 7

14) (85)(365)(0)

15) (150)(60)

Evaluate.

16) 10^2

17) 9^3

18) 10^4

19) 6^5

20) 1^{17}

Simplify.

21) $240 \div 5 - 2$

22) $12 + 28 \cdot 29$
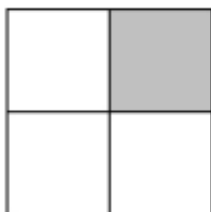
23) $8 \cdot 7 - 3$

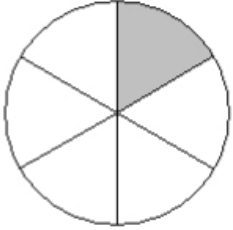24) $72 - 4 \cdot 4$

25) $11 \cdot 7 + 15 \cdot 3$

26) $0 \div 9 + 3 \cdot 6$

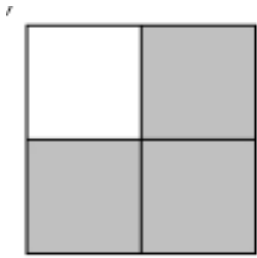## Write a fraction to represent the shaded part of the figure.

27)

28)

29)

Write the mixed number as an improper fraction.

30) $5\frac{8}{9}$

31) $4\frac{5}{7}$

32) $2\frac{3}{7}$

33) $5\frac{2}{7}$

Write the improper fraction as a mixed or whole number.

34) $\frac{19}{3}$

35) $\frac{22}{3}$

36) $\frac{10}{3}$

37) $\frac{105}{7}$

Multiply. Write the answer in simplest form.

38) $\frac{1}{9} \cdot \frac{5}{6}$

39) $\frac{4}{5} \cdot \frac{23}{25}$

40) $\frac{2}{6} \cdot \frac{14}{25}$

41) $\frac{3}{5} \cdot \frac{2}{3} \cdot \frac{1}{4}$

Find the reciprocal of the number.

42) $\frac{5}{7}$

43) $\frac{1}{5}$

44) $\frac{1}{14}$

Divide. Write the answer in simplest form.

45) $\frac{2}{5} \div \frac{6}{7}$

46) $\frac{4}{11} \div \frac{3}{19}$

47) $\frac{1}{11} \div \frac{5}{14}$

48) $\frac{5}{17} \div \frac{7}{12}$

List all the factors of the number.

49) 30

50) 28

51) 36

52) 45

Add.

53) 6+ (-1)

54) -3 + 5

55) 53+ (-51)

56) -11+ 56

57) -31+ 0

Subtract.

58) 3- 14

59) -9 - 10

60) -15- (-4)

61) 15- (-2)

62) -14- 20

Multiply.

63) -11(15)

64) -2(17)

65) -17(-4)

66) -3(5)

67) -1.8(-3.2)

68) -2(0)

69) 0(-7)

70) $-\frac{4}{5}\left(-\frac{2}{9}\right)$

71) $-\frac{2}{7}\left(\frac{4}{9}\right)$

72) -4(-4)(4)

73) -2(-3)(-3)

74) -4(-7)(3)

75) -7(-3)(-3)

76) 5(-1)(4)(-7)

77) -15(0)(-2)(8)

Evaluate.

78) $(-2)^2$

79) $(-7)^4$

80) -6^2

81) -5^4

82) $(-4)^3$

83) -9^3

84) $(-6)^5$

85) -6^5

86) $(-1)^{22}$

87) -1^{30}

88) $(-1)^7$

89) $(-\frac{8}{7})^2$

Multiply.

90) -2(-13)

91) -9(20)

92) -16(-4)

93) -14(9)

94) -5(-5)(4)

95) 2(-1)(-1)

Divide.

96) -18 ÷ 2

97) 18 ÷ (-9)

98) $- \frac{30}{2}$

99) 156 ÷ -6

100) $\frac{-45}{-3}$

Ratios and Rates

Express each ratio as a fraction in the simplest form.

1) 35 blue cars out of 70 cars _____

2) 7 quarts to 63 quarts _____

3) 5 pennies to 35 pennies _____

4) 8 beetles out of 24 insects _____

5) 44 cups to 48 cups _____

6) 45 gallons to 60 gallons _____

7) 10 dimes to 35 dimes _____

8) 21 miles out of 27 miles _____

Express each phrase as a rate and unit rate.
(Round your answer to the nearest hundredth.)

	Rate	Unit Rate
9) 8 dollars for 3 cans of tuna	_____	_____
10) 6 calculators cost $140.00	_____	_____
11) 23 dollars for 4 books	_____	_____
12) 2 inches of snow in 7 hours	_____	_____
13) 6 pencils for 9 dollars	_____	_____
14) 11 chocolate bars cost 22 dollars	_____	_____
15) 11 batteries cost 19 dollars	_____	_____
16) 85 miles on 4 gallons of gas	_____	_____

Write each proportion.

1 48 is to 32 as 3 is to 2.

2 6 adults is to 10 children as 18 adults is to 30 children.

3 If 12 pens cost $4, then 33 pens will cost $11.

Determine if each proportion is true or false:

4 $\dfrac{2}{3} = \dfrac{7}{16}$

5 $\dfrac{48 \text{ acres}}{144 \text{ bags seed}} = \dfrac{5 \text{ acres}}{15 \text{ bags seed}}$

6 $\dfrac{12}{28} = \dfrac{18}{42}$

Solve each proportion to find the value of "x".

7 $\dfrac{3}{6} = \dfrac{x}{8}$

8 $\dfrac{52}{x} = \dfrac{4}{1}$

9 $\dfrac{15}{12} = \dfrac{10}{x}$

10 $\dfrac{18}{x} = \dfrac{2.4}{28}$

11 $\dfrac{3}{4} = \dfrac{x}{3.8}$

12 $\dfrac{x}{12} = \dfrac{2\frac{1}{3}}{5}$

Write each percent as a fraction or mixed number. Simplify.

1. 21%

2. 5%

3. 14%

4. 130%

5. $12\frac{1}{2}$ %

Write each percent as a decimal.

6. 47%

7. 26.3%

8. 219%

9. .02%

10. $3\frac{1}{2}$ %

Write each decimal as a percent.

11. 0.33

12. 0.04

13. 2.51

14. 6.8

15. 3

Write each fraction as a percent.

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

17. $\frac{2}{5}$

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

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

20. $2\frac{3}{5}$

Solve.

1 What is 35% of 200?

2 15% of what amount is 6?

3 30 is what percent of 20?

4 Find 102% of 2000.

5 What percent of 80 is 60?

6 14 is 70% of what number?

7 What is 0.5% of 3.2?

8 2.5 is what percent of 4?

9 5 is what percent of 15?

10 12.5% of 32 is what number?

11 What percent of 8.7 is 17.4?

12 What is 3.1% of 60?

Evaluate each expression.

1   *Let n = 3*   12 + n

2   *Let S = 16*   3S

3   *Let x = - 7*   - x + x

4   *Let p = - 2* p^3

5   *Let m = 500* $\dfrac{m}{100}$

6   *Let q = 47*   q ÷ 0

Evaluate. Let **x = - 2** *and* **y = - 3**

7   x - y

8   xy

9 $x^4 + y^3$

10 $\dfrac{x + y}{y - x}$

11 $2x^2y$

12   - xy

13 $(2xy)^2$

14 $\dfrac{4}{x + y - 1}$
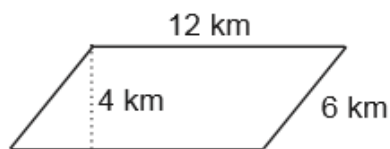
Geometry: Quadrilaterals

8m

6m
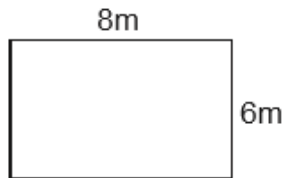
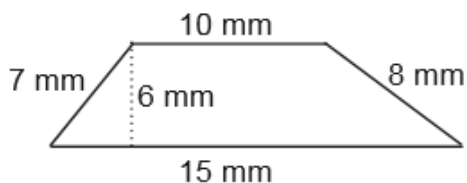1 Find the perimeter of the rectangle.

2 Find the area of the rectangle.

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7 ft
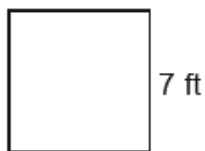
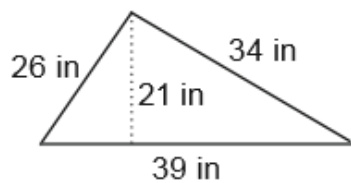3 Find the perimeter of the square.

4 Find the area of the square.

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12 km

4 km   6 km

5 Find the perimeter of the parallelogram.

6 Find the area of the parallelogram.
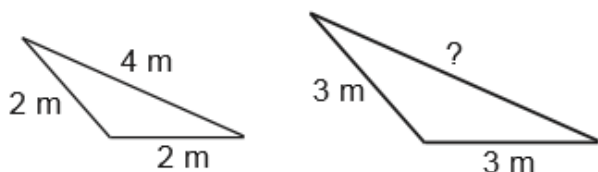
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10 mm

7 mm   6 mm   8 mm

15 mm

7 Find the perimeter of the trapezoid.

8 Find the area of the trapezoid.

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1 Find the perimeter of the triangle.

2 Find the area of the triangle.

3 Find the missing side to the similar triangles.

4 What is the sum of the angles of a triangle?

Identify the type of each triangle according to its description.

5 2 equal sides, 2 equal angles

6 3 acute angles

7 1 right angle

8 3 equal sides, 3 equal angles

9 no equal sides, no equal angles

10 1 obtuse angle

1 A circle has a diameter of 48 km. What is the radius?

2 Find the diameter of a circle whose radius is 10 miles.

3 What is the value of π, rounded to the hundredths place?

4 Find the circumference of a circle whose diameter is 19 m.

5 Find the circumference of a circle whose radius is 2.5 ft.

6 Find the area of a circle whose radius is 7 mm.

7 Find the area of a circle whose diameter is 18 yd.

8 Find the area of a semicircle whose radius is 5 cm.