

6th Grade - Summer Math Packet

Multiplication and Division (no calculator)

(Sixth graders should know all fact families 0-12 with speed and accuracy).

Write the answers to the following math facts:

1.) $7 \times 9 = \underline{\hspace{2cm}}$ 4.) $4 \times 6 = \underline{\hspace{2cm}}$ 7.) $6 \times 9 = \underline{\hspace{2cm}}$ 10.) $5 \times 12 = \underline{\hspace{2cm}}$

2.) $6 \times 6 = \underline{\hspace{2cm}}$ 5.) $6 \times 7 = \underline{\hspace{2cm}}$ 8.) $7 \times 8 = \underline{\hspace{2cm}}$ 11.) $7 \times 12 = \underline{\hspace{2cm}}$

3.) $8 \times 4 = \underline{\hspace{2cm}}$ 6.) $8 \times 6 = \underline{\hspace{2cm}}$ 9.) $9 \times 4 = \underline{\hspace{2cm}}$ 12.) $9 \times 12 = \underline{\hspace{2cm}}$

Solve the following problems. Show all of your work. Draw a box around your final answer.

13.)

74

$\times 13$

14.)

423

$\times 30$

15.)

69

$\times 58$

16.)

307

$\times 46$

17.)

$675 \div 9$

18.)

$1440 \div 24$

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Factors and Multiples (no calculator)

Use the clues to determine the secret numbers:

1. _____

Clue 1: The number has 2 digits.

Clue 2: The number has 13 as a factor.

Clue 3: The sum of the digits is 11.

2. _____

Clue 1: The number is prime.

Clue 2: The number is less than 19.

Clue 3: The sum of the digits is greater than 7.

3. _____

Clue 1: The number has three digits.

Clue 2: The number is less than 140.

Clue 3: The number has 7 as a factor.

Clue 4: The number is even.

Clue 5: The sum of the digits is less than 9.

4. _____

Ms. Goldman is thinking of a number that is less than 20 and has three factor pairs. She says that if she adds the factors in each factor pair the sums are 19, 11 and 9. What is her number?

5. List all the factors of

12 _____

7 _____

36 _____

80 _____

225 _____

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6. Find the common factors of 12 and 20 .Circle the Greatest Common Factor (GCF)_____

7. Find the common factors of 24 and 48. Circle the GCF _____

8. Find the common factors of 30 and 72. Circle the GCF _____

9. Graham is planning a party for his younger sister. He has 36 prizes and 24 balloons. How many children can he have at the party so that each child gets an equal number of prizes and an equal number of balloons? Explain your answer using complete sentences. _____

10. A number has 4 and 5 as factors. What other numbers must be factors? Why? What is the smallest number this number could be? _____

11. List 10 multiples of 12. _____

12. List 10 multiples of 13 _____

13. List 20 multiples each of 5 and 8. List all the multiples they have in common. What is the Least Common Multiple (LCM) of 5 & 8? _____

14. Can you find the Greatest Common Multiple? Why or why not? _____

15. Is the number 26 divisible by 2? 3? 5? Or 9? How do you know? _____

16. Is the number 432 divisible by 2? 3? 5? 6? 9? 10? _____

17. Two radio stations are playing "Old Bald Men." WXRT plays the song every 18 minutes and WNPR plays it every 24 minutes. Both stations play the song at 3:00 PM. When is the next time the stations will play the song at the same time? _____

18. Mike and Duane are performing live at a Parker MX. This year they want to incorporate a crazy light show. They spoke with Mr. Early and decided that red lights would flash every 5 seconds, blue lights would flash every 8 seconds, and yellow lights would flash every 10 seconds. How many seconds or minutes into the show will all three lights flash at the same time? _____

19. You just joined a soccer team and it's time to choose your number. You decide you want a prime number, but it must be between 20 and 40. What do you choose and how can you prove it's a prime number? _____

20. Make up a word problem about multiples or factors and show it to someone in your family. _____

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Measurement (Customary Length) review

12 inches = 1 foot

3 feet = 1 yard

5,280 feet = 1 mile

1,760 yards = 1 mile

Use the chart above to help you solve the following problems. Show all your work.



1.) 6 yards = _____ feet

2.) 6 feet = _____ inches

3.) 2 miles = _____ feet

4.) 2 miles = _____ inches

5.) 39 yards = _____ inches

6.) When you are converting (changing) a larger unit of measurement to a smaller unit of measurement, do you multiply or divide? Draw a picture that proves your answer.

7.) 36 inches = _____ feet

8.) 36 inches = _____ yard(s)

9.) 63 feet = _____ yards

10.) 108 inches = _____ feet

11.) 45 feet = _____ yards

12.) When you are converting (changing) a smaller unit of measurement to a larger unit of measurement, do you multiply or divide? Draw a picture that proves your answer.

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Fractions (no calculator)

- 1.) The denominator is 5 and the numerator is 4. Write the fraction. _____
- 2.) Find 5 fractions that are equal to $\frac{1}{5}$. _____
- 3.) Which is bigger, $\frac{2}{3}$ or $\frac{3}{5}$? How can you prove your answer? Show at least two ways.

- 4.) $\frac{3}{8} + \frac{2}{8}$ _____
- 5.) $\frac{5}{8} + \frac{7}{8}$ _____
- 6.) $\frac{3}{8} + \frac{1}{4}$ _____
- 7.) Write a fraction that is greater than $\frac{1}{2}$ and less than $\frac{3}{4}$? How do you know it is correct?

Find the missing numerator or denominator. Show all your work.

- 8.) $\frac{3}{7} = \frac{9}{?}$ Denominator =
- 9.) $\frac{4}{24} = \frac{1}{?}$ Denominator =
- 10.) $\frac{6}{48} = \frac{?}{8}$ Numerator =
- 11.) $\frac{28}{35} = \frac{?}{5}$ Numerator =
- 12.) $\frac{48}{72} = \frac{6}{?}$ Denominator =
- 13.) Fiona bought a brand new Harley Davidson motorcycle. Since the weather was nice, she decided to go out for a ride with some of her friends. Before leaving town, she stopped to fill up her motorcycle with gas so that she had a full tank. If Fiona's motorcycle has a 4 gallon gas tank, and she only had to add $2\frac{4}{7}$ gallons, how much gas was in the tank before she filled up? Show all your work _____

14.) Change $\frac{13}{8}$ to a mixed number. _____

15.) Change $\frac{24}{5}$ to a mixed number. _____

Write the following words as a fraction:

16.) three and nine fifteenths _____

17.) twelve and fourteen twentieths _____

Change the following into an improper fraction:

18.) six and two thirds _____

19.) ten and six sevenths _____

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Simplify the following:

20.) $14/2$ _____

21.) $1\ 8/32$ _____

22.) $8/24$ _____

23.) $32/64$ _____

24.) $5/15$ _____

25.) $20/45$ _____

Decimals and Percents (no calculator)

1.) Write a fraction to represent each decimal. Make sure the fraction is in simplest form.

$0.3 =$

$0.21 =$

$0.4 =$

$0.37 =$

$0.5 =$

2.) Match up the fractions with the decimals they are equal to.

0.5 $9/12$

0.75 $1/5$

0.2 $3/10$

0.10 $1/10$

0.3 $\frac{1}{2}$

What place value do the underlined digits carry, and how many of each are there?

3) $10,\underline{3}67$

4) $5,23\underline{4}.23$

5) $10.2\underline{0}01$

6) $\underline{9}.16$

7) $0.57\underline{9}$

8) $\underline{2}10.552$

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Round the following numbers to the nearest tenth.

Reminder: Since you are rounding to the nearest tenth, you need to refer to the digit in the hundredth's place value. If the digit in the hundredth's place value is 5 or greater, the digit in the tenth's place value will round up. If the digit in the hundredth's place value is less than 5, the digit in the tenth's place value will remain the same.

(Example: $10.067 = 10.1$)

9.) $15.245 =$

10.) $7.321 =$

11.) $1.58 =$

12.) $235.262 =$

Round the following numbers to the nearest whole number.

Reminder: Your answer must be just the whole number. No answer with a decimal will be correct.

(Example: $50.861 = 51$)

13.) $213.56 =$

14.) $10.39567 =$

15.) $95.459 =$

16.) $12.107 =$

17.) Arrange the numbers below on the place value lines so they create the greatest value possible.
6, 8, 1, 3, 2

_____ . _____

18.) Arrange the numbers below on the place value lines so they create the smallest value possible.
6, 8, 1, 3, 2

_____ . _____

19) Katherine was on an airplane to Spain. The trip would take exactly 12 hours. So far she had flown 3 hours. What percentage of the trip has Katherine completed so far?

20.) Marc had to walk to the grocery store which was exactly 50 meters from his house. So far he has walked exactly 21 meters. What percentage of a mile has he walked?

21.) Leigh bought new shoes that will last for 500 miles. She has walked 20% of the recommended usage. How many miles has she walked so far?

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Geometry

Use the numbers below to solve 1, 2, & 3.

50° 75° 179° 130° 62° 90° 142°
36° 150° 25° 160° 10°

1. Draw a circle around each acute angle.
2. Draw a rectangle around each obtuse angle
3. Leave each right angle as it is.



Show all your work, including pictures if they help, as you find the answers to the questions!

Ms. Hamilton wants to put a decorative iron fence (rather like Winnie's in *Tuck Everlasting*) around her yard. The yard is a perfect rectangle: its length is 24.75 feet and its width is 12.75 feet. Home Depot charges \$50 a yard for iron fencing.

4. How many feet of fencing does Ms. Hamilton need to buy? _____
5. What do you call the distance around a rectangle? _____
6. How much will the fencing cost? _____

Directions: Using your knowledge of lines, line segments, rays, and intersecting lines, answer the following questions. Use your ruler for straight lines.

- 7.) Draw line segment AB and have it intersect with line TR at point S.
- 8.) Draw two intersecting lines, label them, and have them intersect at point C.
- 9.) Create one drawing that shows three rays sharing one endpoint.
- 10.) Name 5 kinds of quadrilaterals

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For the following remember P=Perimeter l=length w=width A=Area. $P = (l + w) \times 2$ and $A = l \times w$



11.) Draw a rectangle with a length of 15 cm and a width of 6 cm. Find the Perimeter and Area.

Draw three examples of a rectangle that have an area of 30. Calculate the perimeter of each.

12.)

13.)

14.)

15.) Look around your room. Draw and identify 10 polygons.