Summer Math Packet

Complete each problem showing all your work. If you need to use another piece of paper, attach it to the packet when you are done. Refer to the examples in your math workbook to refresh your memory if necessary.

A. Operations with Decimals -

1) 5.95 + 4.96
10.91

2) 4.44 + 12.12
16.56

3) 81.85 – 9.6
72.25

4) 20.11 + 8.284
28.394

5) 20.11 – 8.284
11.826

6) 7.5 x 4.2
31.5

7) 26.3 x 2.41
63.383

8) 0.516 ÷ 2
0.258

9) 51.98 ÷ 11.3
4.6

10) Write the equation out using numerals and then solve:
One and forty-four hundredths divided by one and two tenths equals
1.44 ÷ 1.2 = 1.2

B. Operations with Fractions -
Compare each fraction by writing >, <, or =.

11) $\frac{2}{3}$ __=___ $\frac{14}{21}$

12) $\frac{2}{3}$ ___<___ $\frac{3}{4}$

13) $\frac{3}{12}$ ____<___ $\frac{5}{15}$

Write the following fractions in simplest form (reduce the fraction).

14) $\frac{30}{40}$
$\frac{3}{4}$

15) $\frac{16}{20}$
$\frac{4}{5}$

16) $\frac{20}{28}$
$\frac{5}{7}$

17) $\frac{6}{18}$
$\frac{1}{3}$

Add, subtract, multiply or divide the following fractions.

18) $\frac{2}{3} + \frac{4}{5} =$
$\frac{22}{15} = 1\frac{7}{15}$

19) $6\frac{2}{5} + 1\frac{3}{5} =$
8

20) $\frac{3}{7} - \frac{1}{4} =$
$\frac{5}{28}$

21) $6\frac{2}{5} - 1\frac{1}{8} =$
$5\frac{11}{40}$

22) $\frac{5}{9} \times \frac{21}{25} =$

$\frac{105}{225} = \frac{7}{15}$

23) $6\frac{1}{4} \times 1\frac{3}{5} =$

$\frac{200}{20} = 10$

24) $12 \div 5\frac{1}{4} =$

$\frac{48}{21} = \frac{16}{7} = 2\frac{2}{7}$

24) $6\frac{2}{5} \div 1\frac{1}{3} =$

$\frac{24}{5} = 4\frac{4}{5}$

25. Order the following numbers from least to greatest. $\frac{27}{3}$, 6.5, $\frac{18}{3}$, 5.99

5.99, $\frac{18}{3}$, 6.5, $\frac{27}{4}$

26. Write the absolute value of the following numbers:

a) |-21| = 21

b) | -34| = 34

c) | 7 | = 7

d) | -2| = 2

27. Solve these problems involving negative integers:

a) -3 + 5 = 2

b) 23 - (-15) = 38

c) 12 + -9 = 3

d) -14 – 18 = -32

e) -21 + -2 = -23

f) 5 – (-8) = 13

g) 5 x -2 = -10

h) -14 x 5 = -70

i) -21 x -9 = 189

j) -2 x -12 = 24

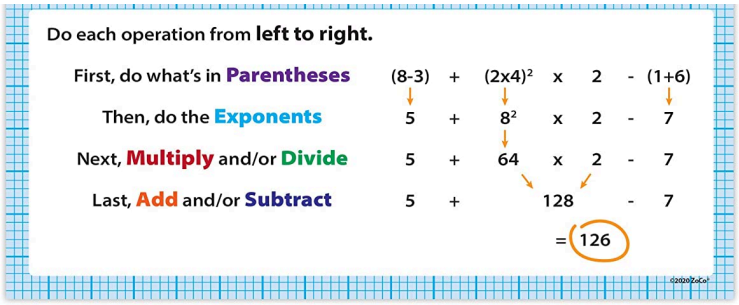
k) -12 ÷ 3 = -4

l) -22 ÷ -2 = 11

m) -25 ÷ -5 = 5

n) 144 ÷ -12 = -12

28. Keeping in mind the order of operations, solve the following equations.



a) $1 - (9 - 4) \div 5$

0

b) $2 \times (-16 + 2) \div 4$

-7

c) $9 - 3 \times (6 \div 2)$

0

d) $4 \times 5 - 10 - 2(1 - 2) + 5$

17

29. Solve the following word problems involving positive and negative integers:

a) A scuba diver swam 96 feet beneath the surface of the lake. He then climbs up 49 feet. What is his depth now? -47 feet

b) It will be – 12º tonight. The weatherman predicts it will be 25º warmer by noon tomorrow. What will the temperature be by noon tomorrow? 13º

c) Josie has $47 left in her checking account. If she writes a check for $55, what will Josie's balance be? -8 dollars

d) Pythagoras was born about 582 BC. Isaac Newton was born in 1643 AD. How many years apart were they born? 2,225 years apart

30. Solve the following problems involving percents:

a) ⬜ is 25% of 12 3

b) 8 is ⬜% of 40 20

c) 3 is 30% of ⬜ 10

31. Convert the following percents to fractions in simplest form. *Example: 40% = $\frac{40}{100} = \frac{2}{5}$*

a) 25% $\frac{1}{4}$ b) 2% $\frac{1}{50}$

c) 45% $\frac{9}{20}$ d) 60% $\frac{3}{5}$

32. Convert the following fractions to percents: *Example: ¾ = $\frac{75}{100}$ = 75%*

a) $\frac{17}{100}$ 17% b) $\frac{3}{50}$ 6%

c) $\frac{4}{25}$ 16% d) $\frac{4}{5}$ 80%

33. Convert the following percents to decimals: *Example: 50% = $\frac{50}{100}$ = .50*

a) 27% = .27 b) 4% = .04

c) 130% = 1.3 d) 5.6% = .056

34. Convert the following decimals to percents: *Example: 0.08 = $\frac{8}{100}$ = 8%*

a) 0.43 = 43% b) 0.05 5%

c) 0.032 = 3.2% d) 1.65 = 165%

35. Solve the following word problems involving percents:

a) Melissa's softball team won 9 games and lost 1 game. What percent of the games played were won? 9 out of 10 games = 90%

b) There are 25 students in a class. If 20 percent of students are absent one day, how many students are absent? 20% of 25 is 5. Five students are absent.

c) Sally bought a bag containing 18 apples. When she got home, she discovered three of the apples were rotten. What percent of the apples were rotten? 3 out of 18 = 16.7%

d) Ninety percent of graduating students at a particular high school go on to college. If 120 students are graduating this year, how many will be going on to college?
90% of 120 = 108 108 students will be going on to college.

e) A snack mix label says that 20% of the snack mix is peanuts. If the weight of the peanuts in the bag is 2 ounces, what is the total weight of the bag of snack mix?
2 is 20% of 10. The total weight of the bag is 10 ounces.

36. Calculate the following:

a) $2^2 =$ 4 b) $3^3 =$ 27 c) $4^2 - 7 =$ 1

d) $32 \div 2^3 =$ 4 e) $4^3 + 1^8 =$ 65 d) $3^2 - 0^{23} =$ 9

37. Find the square root of the following numbers:

a) $\sqrt{36}$ 6

$\sqrt{100}$ 10

$\sqrt{81}$ 9

$\sqrt{144}$ 12

b) $\sqrt{64}$ 8

$\sqrt{169}$ 13

$\sqrt{289}$ 17

$\sqrt{196}$ 14

38. Solve the following equations for x: (*Note- a number next to an x means multiply)*

a) x + 3 = 10 7

b) 13 = - 4 + x 17

c) 12 - x = -2 14

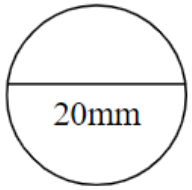
d) 17 + x = 10 -7

e) 5x = 20 4

f) 2x = -6 -3

39) Find the perimeter or circumference of the following shapes and then find their areas:

a.



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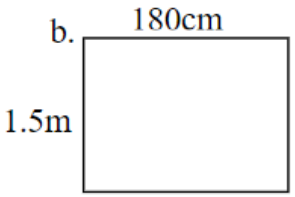
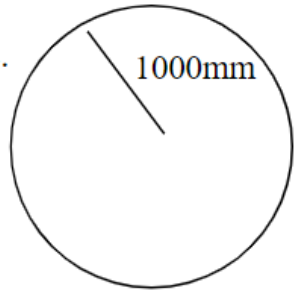


c.



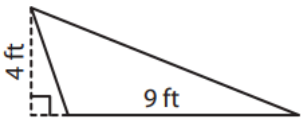
a) area = 314 mm^2 circumference = 62.8 mm

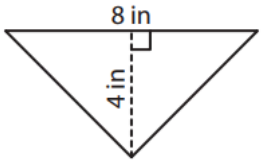
b) area = 27,000 cm^2 * perimeter = 660 cm*

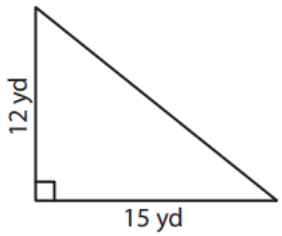
* This one was tricky because the meters needed to be converted to centimeters first.

c) area = 3,140,000 mm^2 circumference = 6,280 mm

40) Find the area of the triangles:





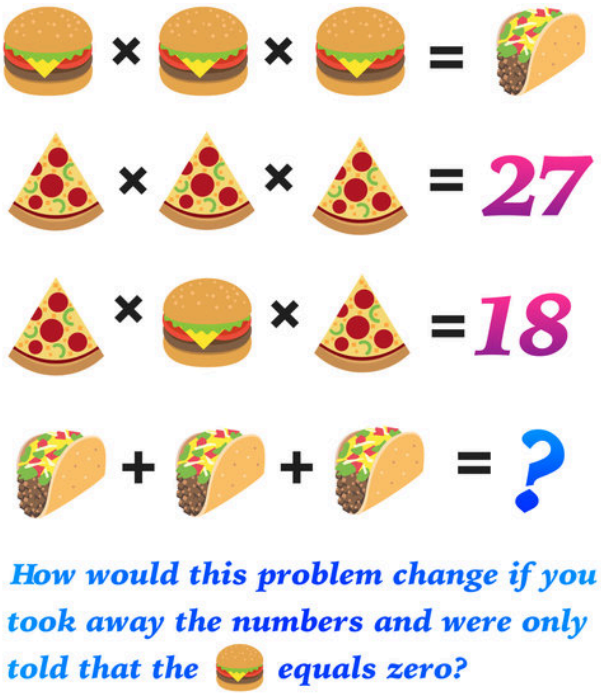


a) area = 18 ft^2 b) area = 16 in^2 c) area = 90 yd^2

Summer Math Challenges!

Complete as many of these challenges as you can. each one will make you more prepared for next year, and you might just have fun solving them!

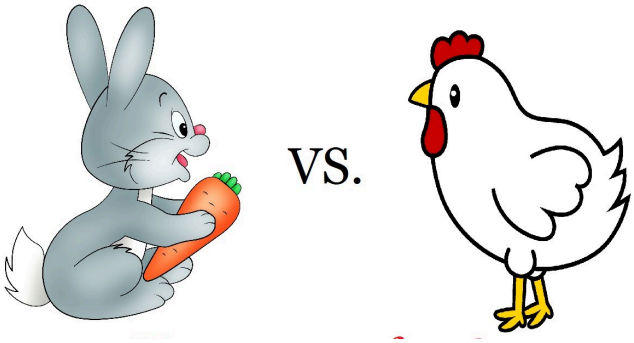
Challenge 1: Solve the problem and then answer the question written in blue at the bottom.



The hamburger = 2
The pizza = 3
The tacos = 8

If the hamburgers were equal to zero, then the tacos would be zero, so the question mark would also be zero. Without numbers, it would be impossible to tell what the pizzas were equal to.

Challenge 2: Jessie has some chickens and rabbits. There are 30 heads and 76 legs in all. How many chickens and rabbits does Jessie have?



Number of Chickens: 22

Number of Rabbits: 8

Challenge 3: In the cartoon below, Jason tells the clerk that he wants to order the difference between the area of the 12 inch pizza (area of 113 square inches and costing $14.99) and the 16 inch pizza (area of 201 square inches and costing $17.99). How much does each pizza cost per square inch and how much does the “88 square inch difference” pizza that Jason wants cost per square inch? One way to figure it out is to set up each pizza as shown here:

$$\frac{\$14.99}{113\ in^2} = \frac{\$0.13}{1\ in^2} \qquad \frac{\$17.99}{201\ in^2} = \frac{\$0.09}{1\ in^2} \qquad \frac{\$3.00}{88\ in^2} = \frac{\$0.03}{1\ in^2}$$

So, the 12 inch pizza costs 13 cents/in^2 and the 16 inch pizza costs 9 cents/in^2, but if you were able to buy just the amount of pizza that was equal to the difference in area between those two pizzas, you’d only have to pay 3 cents/in^2 - a bargain!

Can you see why Jason wanted the “difference” pizza?

Challenge 4: James is starting to save $1000 to buy a new cell phone. In January, he saved $5. In February, he saved twice as much as he saved in January, for a total savings of $15 ($5+$10). If James continues to save twice as much each month as he saved the previous month, in which month will his total savings be enough to buy the phone? August

Month	January	February	March	April	May	June	July	August
Doubled	$5	$10	$20	$40	$80	$160	$320	$640
Total	$5	$15	$35	$75	$155	$315	$635	$1275

Challenge 5: Antonia likes calculating the sum of the digits that she sees on her digital clock. For example, if the time were 11:47, the sum would be equal to 13 (1+1+4+7). What is the largest sum she can get on a 12-hour digital clock? 9:59