Harbor Country Day School

Summer Math Packet
For Students Entering Grade 6

Please complete this math packet throughout the summer and bring it on the first day of school.

Name _____

Part I

1. Consider the number 49,752,003,096.

   (a) Write the number in words. [1]

   (b) What is the place value of the digit 4 in this number? _____ [1]

   (c) What digit is in the ten millions place? _____ [1]

   (d) Round this number to the nearest billion. _____ [1]

   (e) Is 49,752,030,096 greater than or smaller than this number? _____ [1]

   By how much? _____

2. Round each number to the nearest hundred thousand and then estimate the value of

   (a) 899,371 + 6,790,897 [1]

   (b) 5,296,003 - 742,851 [1]

3. Estimate the value of

   (a) 492,396 x 7 (b) 3,899,465 ÷ 9 [2]

   (c) 8304 x 480 (d) 63,854 ÷ 830 [2]

4. Write 84 as a product of its prime factors. [2]

5. Find the value of

(a) 6×10^4 [1]

(b) 101×10^3 [1]

(c) $2^3 \times 3^2 \times 5^2 \times 1^8$ [2]

6. Find the value of

(a) $6 + 2 \times 24 \div 8 - 12 =$ _____ [1]

(b) $48 \div (10 - 4) \times 100 =$ _____ [1]

(c) $12 + (10 + 2) \div (6 \times 2) - 3 =$ _____ [2]

7. Find the missing numbers.

(a) $(38 + 5) \times 3 = (38 \times$ _____ $) + (5 \times$ _____ $)$ [1]

(b) $35 \times 7 = ($ _____ $\times 7) + (5 \times 7)$ [1]

(c) (_____ $) \times 6 = (45 \times 6) - (3 \times 6)$ [1]

(d) $89 \times 4 = (90 \times$ _____ $) - (1 \times$ _____ $)$ [1]

8. Solve using mental calculation.

(a) 498 + 372 = (b) 501 + 845 = [2]

(c) 534 - 398 = (d) 700 - 82 = [2]

(e) 99 x 4 = (f) 29 x 80 = [2]

(g) 25 x 32 = (h) 11 x 12 = [2]

9. Solve. Give your answer as a whole number or a mixed number.

(a) 389 x 64 (b) 6,497 x 83 [2]

(c) 2,304 ÷ 24 (d) 2,176 ÷ 68 [4]

(e) 22 ÷ 8 (f) 4,576 ÷ 24 [4]

10. Sam bought 3 shirts and 2 pairs of pants for $135. Each pair of pants costs $15 more than each shirt. What was the cost of 1 pair of pants? [3]

11. Aaron saved twice as much money as Britney. Carlos saved $70 more than Britney. If they saved $1,790 altogether, how much did Carlos save? [3]

12. Express the value of each of the following in its simplest form.

(a) $3\frac{5}{6} + 2\frac{9}{10}$

(b) $5\frac{1}{9} - 2\frac{2}{3}$ [2]

(c) $6 \times \frac{3}{4}$

(d) $\frac{3}{8}$ of 20 [2]

13. Express the value of each of the following in its simplest form.

(a) $6 \times 2\frac{5}{6}$

(b) $\frac{3}{10} \times \frac{5}{6}$ [4]

(c) $2\frac{3}{4} \times 1\frac{1}{3}$

(d) $\frac{4}{5} \div 8$ [4]

(e) $\frac{9}{10} \div 6$

(f) $5 \div \frac{1}{4}$ [4]

(g) $6 \div \frac{3}{5}$

(h) $\frac{3}{4} \div \frac{5}{8}$ [4]

14. Cathy spent $\frac{4}{5}$ of her money while Josie spent $\frac{1}{2}$ of her money. Both of them had the same amount of money left. If Josie had \$35 left, how much did Cathy have at first? [3]

15. Peter spent $\frac{1}{3}$ of his money on a toy car and $\frac{2}{3}$ of the remainder on a toy boat. He had \$6 left. How much money did he spend altogether? [3]

16. A tank is $\frac{3}{5}$ full with water. If 30 liters more water are needed to fill the tank completely, find the capacity of the tank. [3]

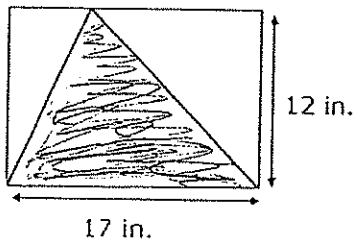
17. (a) How many pieces of string, each $\frac{1}{4}$ meters long, can be cut from a piece of string that is $\frac{7}{8}$ meters long? [2]

(b) How many centimeters of string will be left over? [1]

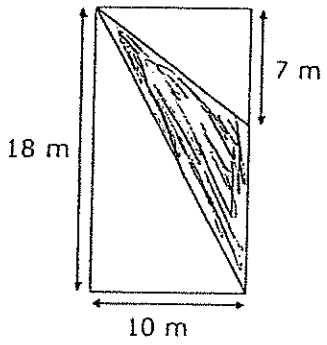
18. Find the area of a rectangle measuring 6 cm by $4\frac{2}{3}$ cm. [3]

19. Find the shaded area of each rectangle. [4]

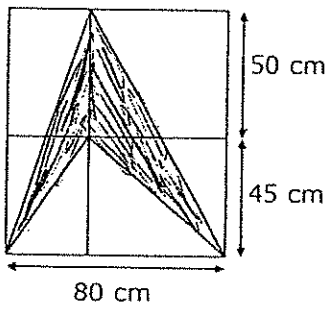
(a)



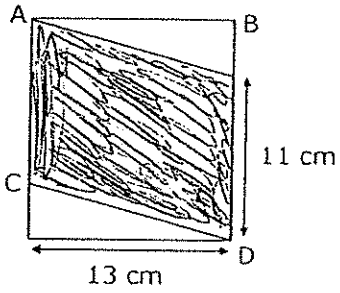
(b)



(c)

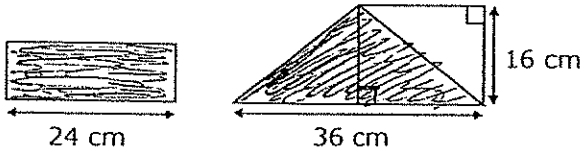


(d)



AB is parallel to CD.

20. The area of the shaded rectangle is the same as the area of the shaded triangle. [2]
Find the perimeter of the rectangle. (Drawings are not to scale.)



Part II

1. Consider the number 12.406

   (a) What is the value of the digit in the tenths place? _____ [1]

   (b) What digit is in the hundredths place? _____ [1]

   (c) What is difference between this number and 12.4? _____ [1]

   (d) Fill in the blanks with a whole number or a fraction. [1]

   12.406 = 1 x _____ + 2 x _____ + 4 x _____ + 6 x _____

2. Write >, <, or = in each ◯

   (a) 0.205 ◯ $\frac{25}{1000}$ (b) 4.10 ◯ 4.1 [2]

   (c) 3.1 - 0.46 ◯ 2 + 0.06 (d) 0.89 x 7 ◯ 7 [2]

   (e) 17.4 ÷ 5 ◯ $\frac{3}{10}$ (f) 3 - 0.12 ◯ $2\frac{8}{9}$ [2]

3. Multiply or divide. Use mental calculation.

   (a) 0.4 x 100 = _____ (b) 0.008 x 1,000 = _____ [2]

   (c) 56.8 ÷ 100 = _____ (d) 0.007 ÷ 0.01 = _____ [2]

   (e) 400 x 0.8 = _____ (f) 120 ÷ 0.02 = _____ [2]

4. Find the equivalent measures.

(a) 0.04 m = _____ cm (b) 6.25 lb = _____ lb _____ oz [2]

(c) 35 ml = _____ liters (d) 0.75 ft = _____ in. [2]

5. Multiply or divide. Give an estimate first.

(a) 17.02 x 43 (b) 8.1 x 2.19 [4]

Estimate: _____ Estimate: _____

Answer: _____ Answer: _____

(c) 11.25 ÷ 18 (d) 89.96 ÷ 0.04 [4]

Estimate: _____ Estimate: _____

Answer: _____ Answer: _____

6. Find the following correct to 2 decimal places

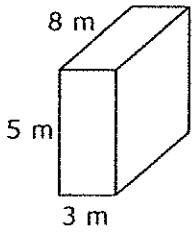
(a) $49.95 \div 0.07$ (b) $89.5 \div 31$ [4]

7. The total cost of 4 lb of fish and 3 lb of meat is \$42.40. If 1 lb of fish costs \$3.25 more than 1 lb of meat, what is the cost of 1 lb of meat? [3]

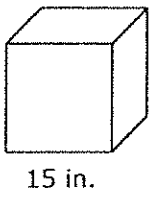
8. The length of one side of a cube is 1 yd. What is its volume in cubic feet? [2]

9. Find the volume the rectangular prism and cube. [2]

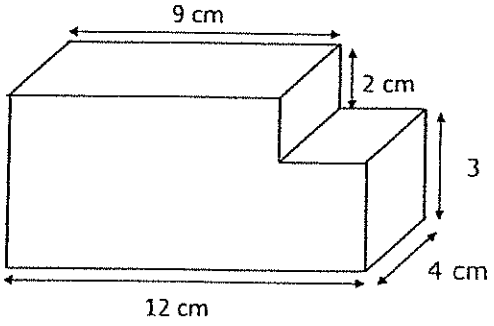
(a)



(b)

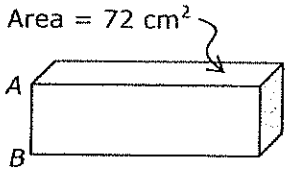


10. The following figure is made from centimeter cubes. Find the volume. [3]



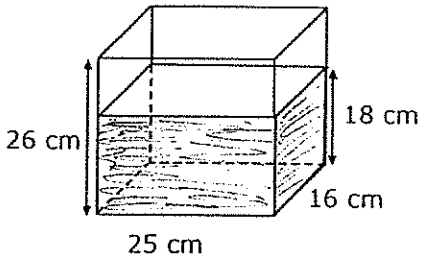
11. The area of one side of a rectangular prism is 72 cm^2, and its volume is 360 cm^3. What is the length of the unknown edge? [2]

AB =



Volume = 360 cm^3

12. A rectangular tank measuring 25 cm by 16 cm by 26 cm is to be filled with water to a depth of 18 cm. How much more water is needed to fill the tank? Give your answer in liters. [3]
(1 liter = 1000 cm^3)



13. How many 4-cm cubes can fit into a rectangular box 1 m long, 0.4 m wide, and 0.6 m high? [3]

14. A rectangular container 8 cm long and 9 cm wide was filled with water to a depth of 6 cm. When 12 marbles of equal size were added to the container, the depth of the water became 7.5 cm. Find the volume of one marble. [3]

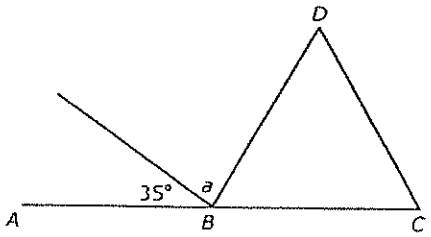
15. Find the average of 21.4, 18.2, and 65.7. [2]

16. Fill in the blank: The average of 42, 36, _____ , and 25 is 30. [2]

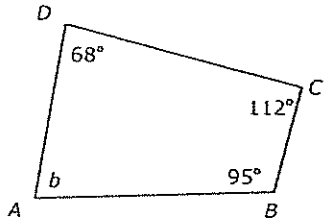
17. The average weight of 3 packages is 2 kg 750 g. The average weight of 2 of them is 3 kg 200 g. Find the weight of the third package. Give your answer in kg and g. [2]

18. The following figures are not drawn to scale. Find the unknown marked angle in each.

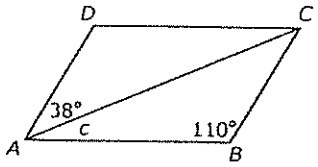
(a) ABC is a straight line. BCD is an equilateral triangle. [2]



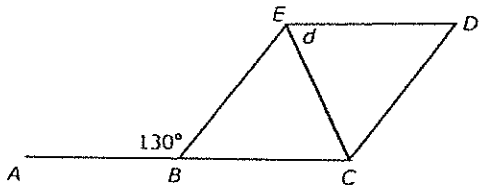
(b) ABCD is a quadrilateral. [2]



(c) ABCD is a parallelogram. [2]



(d) ABC is a straight line. BCDE is a rhombus. [2]



19. Express each as a percentage.

(a) 0.47 [1]

(b) $\frac{6}{15}$ [1]

(c) 215 out of 500 [1]

20. Express as a decimal and as a fraction in its simplest form. [2]

85% Decimal: _____ Fraction: _____

21. John had $75. He spent $15 on a book. What percentage of his money does he have left? [3]

22. The normal price of a camera was $76. At a sale it was sold at a discount of 15%. What was the selling price of the camera? [3]

511 B Multiply. Answer should be in simplest form. First Half

1.	$\frac{2}{4} \times \frac{1}{2} =$	12.	$\frac{2}{12} \times \frac{5}{6} =$
2.	$\frac{1}{2} \times \frac{2}{8} =$	13.	$\frac{4}{6} \times \frac{4}{5} =$
3.	$\frac{2}{4} \times \frac{3}{4} =$	14.	$\frac{3}{4} \times \frac{5}{6} =$
4.	$\frac{6}{10} \times \frac{1}{2} =$	15.	$\frac{5}{3} \times \frac{1}{10} =$
5.	$\frac{8}{10} \times \frac{1}{2} =$	16.	$\frac{3}{8} \times \frac{10}{6} =$
6.	$\frac{2}{6} \times \frac{1}{4} =$	17.	$\frac{5}{16} \times \frac{8}{9} =$
7.	$\frac{4}{6} \times \frac{1}{4} =$	18.	$\frac{3}{8} \times \frac{16}{17} =$
8.	$2 \times \frac{1}{3} \times \frac{3}{4} =$	19.	$\frac{10}{3} \times \frac{9}{50} =$
9.	$\frac{1}{5} \times \frac{1}{3} =$	20.	$\frac{5}{12} \times \frac{14}{10} =$
10.	$\frac{2}{10} \times \frac{2}{3} =$	21.	$\frac{4}{30} \times \frac{8}{2} =$
11.	$3 \times \frac{1}{5} \times \frac{1}{3} =$	22.	$\frac{3}{4} \times \frac{16}{27} =$

526 A Express as a percentage. First Half

1.	$\frac{27}{100}$	13.	$\frac{8}{20}$
2.	$\frac{38}{100}$	14.	$\frac{1}{2}$
3.	$\frac{90}{100}$	15.	$\frac{9}{20}$
4.	$\frac{63}{100}$	16.	$\frac{4}{10}$
5.	$\frac{45}{100}$	17.	$\frac{14}{20}$
6.	$\frac{75}{100}$	18.	$\frac{2}{25}$
7.	$\frac{4}{10}$	19.	$\frac{7}{25}$
8.	$\frac{7}{10}$	20.	$\frac{1}{4}$
9.	$\frac{3}{10}$	21.	$\frac{10}{25}$
10.	$\frac{5}{10}$	22.	$\frac{11}{25}$
11.	$\frac{2}{10}$	23.	$\frac{4}{5}$
12.	$\frac{3}{20}$	24.	$\frac{3}{5}$

529 B Find the measure of the 3rd interior angle of a triangle. First Half

1.	$\angle a = 60°$, $\angle b = 60°$	13.	$\angle a = 26°$, $\angle b = 94°$
2.	$\angle a = 70°$, $\angle b = 60°$	14.	$\angle a = 92°$, $\angle b = 18°$
3.	$\angle a = 75°$, $\angle b = 65°$	15.	$\angle a = 8°$, $\angle b = 3°$
4.	$\angle a = 80°$, $\angle b = 70°$	16.	$\angle a = 23°$, $\angle b = 32°$
5.	$\angle a = 45°$, $\angle b = 65°$	17.	$\angle a = 62°$, $\angle b = 59°$
6.	$\angle a = 15°$, $\angle b = 35°$	18.	$\angle a = 64°$, $\angle b = 59°$
7.	$\angle a = 85°$, $\angle b = 20°$	19.	$\angle a = 99°$, $\angle b = 19°$
8.	$\angle a = 85°$, $\angle b = 45°$	20.	$\angle a = 98°$, $\angle b = 18°$
9.	$\angle a = 99°$, $\angle b = 20°$	21.	$\angle a = 102°$, $\angle b = 19°$
10.	$\angle a = 33°$, $\angle b = 47°$	22.	$\angle a = 103°$, $\angle b = 19°$
11.	$\angle a = 36°$, $\angle b = 84°$	23.	$\angle a = 89°$, $\angle b = 49°$
12.	$\angle a = 46°$, $\angle b = 84°$	24.	$\angle a = 23°$, $\angle b = 85°$

508 B Add. Answer should be in simplest form. First Half

1.	$\frac{1}{9}+\frac{4}{9}=$	11.	$\frac{3}{16}+\frac{3}{16}+\frac{1}{4}=$
2.	$\frac{1}{5}+\frac{2}{5}=$	12.	$\frac{2}{7}+\frac{1}{14}=$
3.	$\frac{1}{7}+\frac{5}{14}=$	13.	$\frac{4}{18}+\frac{3}{9}=$
4.	$\frac{4}{5}+\frac{1}{10}+\frac{1}{10}=$	14.	$\frac{1}{2}+\frac{1}{6}+\frac{1}{3}=$
5.	$\frac{3}{16}+\frac{3}{16}=$	15.	$\frac{1}{9}+\frac{7}{18}=$
6.	$\frac{3}{16}+\frac{1}{16}=$	16.	$\frac{2}{5}+\frac{1}{10}+\frac{1}{10}=$
7.	$\frac{10}{24}+\frac{7}{12}=$	17.	$\frac{1}{4}+\frac{1}{8}+\frac{1}{16}=$
8.	$\frac{7}{8}+\frac{1}{16}+\frac{1}{16}=$	18.	$\frac{5}{12}+\frac{2}{24}+\frac{1}{3}=$
9.	$\frac{1}{5}+\frac{1}{10}=$	19.	$\frac{1}{12}+\frac{2}{24}+\frac{3}{36}=$
10.	$\frac{2}{7}+\frac{8}{14}=$	20.	$\frac{1}{12}+\frac{1}{24}+\frac{2}{48}=$

502 A

Multiply.

First Half

1.	10 × 2 =	15.	700 × 30 =
2.	20 × 10 =	16.	50 × 30 =
3.	3 × 10 =	17.	50 × 60 =
4.	23 × 10 =	18.	50 × 600 =
5.	8 × 100 =	19.	30 × 120 =
6.	80 × 10 =	20.	300 × 12 =
7.	50 × 2 =	21.	8,000 × 70 =
8.	50 × 20 =	22.	200 × 450 =
9.	45 × 2 =	23.	110 × 50 =
10.	45 × 20 =	24.	600 × 70 =
11.	6 × 20 =	25.	120 × 500 =
12.	60 × 20 =	26.	37 × 200 =
13.	60 × 100 =	27.	5,600 × 30 =
14.	450 × 2 =	28.	8,000 × 50 =

502 B

Divide.

First Half

1.	200 ÷ 10 =	15.	4,200,000 ÷ 200 =
2.	2,000 ÷ 10 =	16.	300,000 ÷ 200 =
3.	300 ÷ 10 =	17.	600,000 ÷ 200 =
4.	2,300 ÷ 10 =	18.	600,000 ÷ 20 =
5.	8,000 ÷ 10 =	19.	72,000 ÷ 20 =
6.	80,000 ÷ 100 =	20.	720,000 ÷ 200 =
7.	2,000 ÷ 20 =	21.	11,200,000 ÷ 20 =
8.	20,000 ÷ 20 =	22.	8,100,000 ÷ 90 =
9.	180 ÷ 2 =	23.	5,500,000 ÷ 1,000 =
10.	18,000 ÷ 20 =	24.	8,400,000 ÷ 200 =
11.	240 ÷ 2 =	25.	3,600,000 ÷ 60 =
12.	12,000 ÷ 10 =	26.	148,000 ÷ 20 =
13.	18,000 ÷ 3 =	27.	3,360,000 ÷ 20 =
14.	27,000 ÷ 30 =	28.	32,000,000 ÷ 80 =

503 A Solve. First Half

1.	$3 \times 4 + 2 =$	11.	$(19 - 16) \times 8 =$
2.	$3 \times (4 + 2) =$	12.	$5 \times (8 + 9) =$
3.	$3 + 4 \times 2 =$	13.	$(6 + 8) \times 3 =$
4.	$(3 + 4) \times 2 =$	14.	$50 - (12 \times 4) =$
5.	$(6 - 4) \times 10 =$	15.	$53 - (12 \times 4) =$
6.	$(6 + 3) \times 7 =$	16.	$38 + (100 \div 5) =$
7.	$(15 - 3) \times 2 =$	17.	$(2 \times 3) + (2 \times 15) =$
8.	$2 \times (9 + 9) =$	18.	$2 \times (3 + 15) =$
9.	$24 \div (18 - 14) =$	19.	$(2 \times 64) - 49 =$
10.	$(5 + 3) + 5 =$	20.	$18 + (28 + 12) \div 4 =$