Rising Grade 6 Summer Packet

The problems in this packet are designed to help you review topics from previous mathematics courses that are essential to your success in grade 6. You are expected to bring this completed packet to class on the first day of school. In addition, this packet will count as part of your first-quarter grade. Upon returning, you will be ASSESSED on the content of this packet. All contents outlined in the packet are grade 5 objectives. Neatly SHOW YOUR WORK.

The Four Operations

1. Solve (without a calculator).

   a. $1{,}035 \div 23$

   b. 492×832

2. Solve.

   a. $x - 56{,}409 = 240{,}021$

   b. $7{,}200 \div Y = 90$

   c. $N \div 14 = 236$

3. Write an equation to match this model, and solve it.

$$\longleftarrow \quad 600 \quad \longrightarrow$$

| Y | Y | Y | Y |

4. Place parentheses into the equations to make them true.

   a. $42 \times 10 = 10 - 4 \times 70$ **b.** $143 = 13 \times 5 + 6$

5. Write a single expression (number sentence) for the problem, and solve.

> A store was selling movies that originally cost $19.95 with a $5 discount.
> Mia bought five of them. What was the total cost?

6. Is 991 divisible by 4?

   Why or why not?

7. Factor the following numbers to their prime factors.

a. 26 /\	**b.** 40 /\	**c.** 59 /\

Large Numbers

8. Write the numbers.

   a. 70 million 16 thousand 90

   b. 32 billion 232 thousand

9. Estimate the result of 31,933 × 305.

10. What is the value of the digit 8 in the number **56,782,010,000**?

11. Round these numbers to the nearest thousand, nearest ten thousand, nearest hundred thousand, and nearest million.

number	593,204	19,054,947
to the nearest 1,000		
to the nearest 10,000		
to the nearest 100,000		
to the nearest million		

Problem Solving

12. Jack has an 8-ft long board. He cuts off 1/6 of it.
    How long is the remaining piece, in feet and inches?

13. A website charges a fixed amount for each song download.
    If you can download six songs for $4.68, then how much would
    it cost to download ten songs?

14. A meal in a fancy restaurant costs three times as much as a meal in the cafeteria.
    The meal in the fancy restaurant costs $36. In a 5-day workweek, Mary ate lunch
    at the fancy restaurant once, and in the cafeteria the rest of the days.
    How much did she spend on lunch that week?

15. A blue swimsuit costs $42 and a red swimsuit costs 5/6 as much. How much would the two swimsuits cost together?

Mark the $42 in the bar model. Mark what is not known with "?". Solve.

16. A bag has green and purple marbles. Two-fifths of the marbles are green, and the rest are purple.

    a. Draw a bar model for this situation.

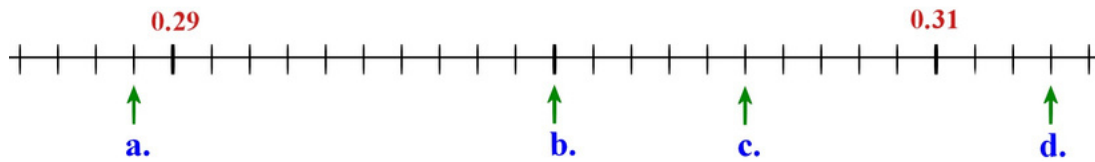   **b.** If there are 134 green marbles, how many are purple?

17. Karen and Ann share the cost of a DVD that costs $29.90 so that Karen pays 3/5 of it and Ann pays 2/5 of it.

    a. *Estimate* how much each person will pay.

    b. Find the exact amount of how much each person will pay.

Decimals

18. Write the decimals indicated by the arrows.

0.29   0.31

a. _____   b. _____   c. _____   d. _____

19. Complete.

a. 0.9 + 0.05 = _____	**b.** 0.28 + _____ = 1	**c.** 0.82 − 0.2 = _____
d. 1.3 − 0.04 = _____	**e.** 0.25 + 0.8 = _____	**f.** _____ − 0.2 = 0.17

20. Write as decimals.

a. $\dfrac{8}{100} =$ **b.** $\dfrac{81}{1000} =$ **c.** $21\dfrac{5}{100} =$

21. Write as fractions or mixed numbers.

a. 0.048   **b.** 1.004   **c.** 7.22

22. Compare, and write < or > .

a. 0.31 ☐ 0.031   **b.** 0.43 ☐ 0.093   **c.** 1.6 ☐ 1.29

23. Round the numbers to the nearest one, nearest tenth, and nearest hundredth.

rounded to...	nearest one	nearest tenth	nearest hundredth	rounded to...	nearest one	nearest tenth	nearest hundredth
5.098				0.306			

24. Solve.

a. 0.4 × 7 =	**d.** 10 × 0.05 =	**g.** 1.1 × 0.3 =
b. 0.4 × 0.7 =	**e.** 100 × 0.05 =	**h.** 70 × 0.9 =
c. 0.4 × 700 =	**f.** 1000 × 0.5 =	**i.** 20 × 0.09 =

25. Divide.

a. 0.36 ÷ 6 =	**c.** 3 ÷ 100 =	**e.** 16 ÷ 10 =
b. 5.6 ÷ 7 =	**d.** 0.7 ÷ 10 =	**f.** 71 ÷ 100 =

26. Convert.

a. 0.2 m = _____ cm	**b.** 0.4 L = _____ ml	**c.** 56 oz = _____ lb _____ oz
37 cm = _____ m	3.5 kg = _____ g	74 in = _____ ft _____ in
2.9 km = _____ m	240 g = _____ kg	15 C = _____ qt _____ C

27. Two liters of ice cream is divided equally into nine bowls. Calculate, to the nearest milliliter, how much ice cream is in *two* bowls.

28. Calculate.

   a. 4.2 − 2.78

   b. 71.40 ÷ 5

   c. 2.2 × 6.4

Graphs

29. Plot the points from the "number rule" on the coordinate grid.

The rule for *x*-values:

Start at 0, and add 1 each time.

The rule for *y*-values:

Start at 1, and add 2 each time.

x	0	1				
y	1					
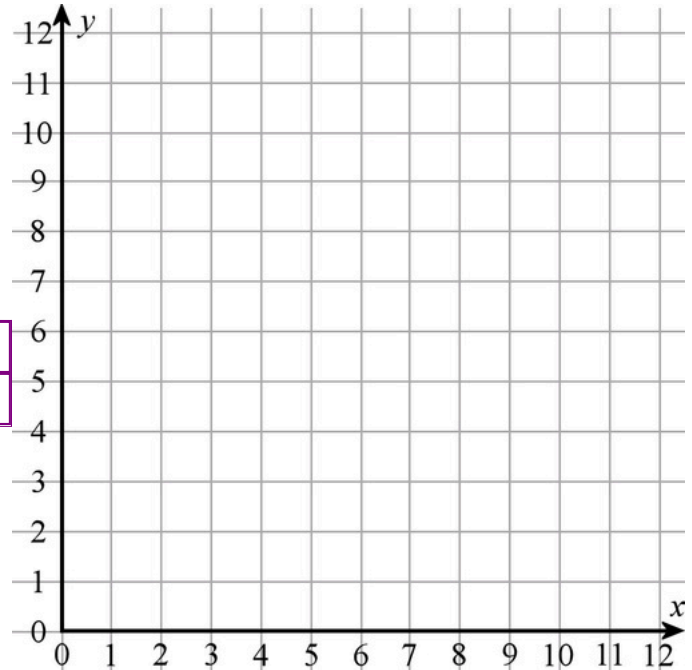
30. The table below gives the amount of sales in a grocery store from Monday through Friday.

Day	Sales (thousands of dollars)
Mon	125
Tue	114
Wed	118
Thu	130
Fri	158

Make a line graph.

Store Sales
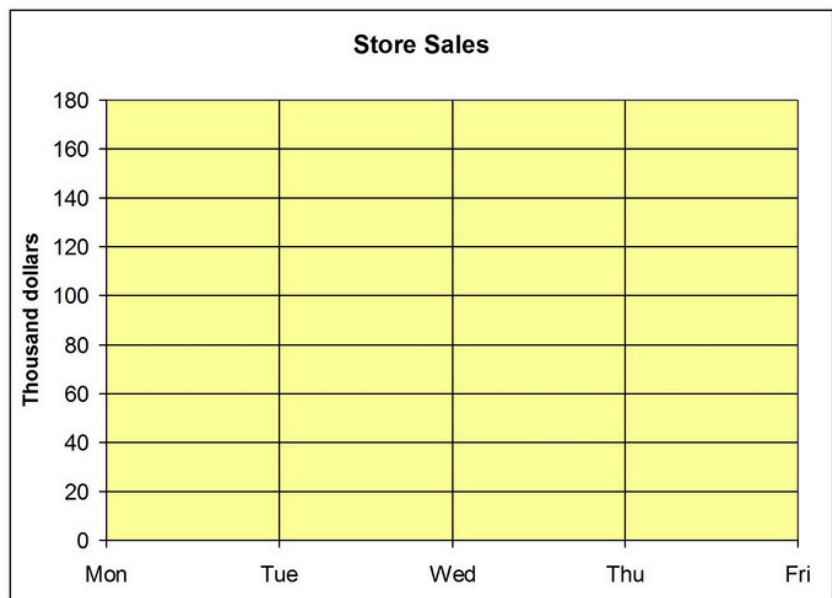
Fractions

31. Add and subtract.

a.	b.	c.
$3\ \dfrac{7}{9}$ $+\quad 2\ \dfrac{5}{9}$ ————	$5\ \dfrac{1}{6}$ $-\quad 2\ \dfrac{5}{6}$ ————	$3\ \dfrac{7}{10}$ $2\ \dfrac{8}{10}$ $+\quad 7\ \dfrac{3}{10}$ ————

32. Mark the fractions on the number line. $\dfrac{3}{4}$, $\dfrac{1}{3}$, $\dfrac{4}{6}$, $\dfrac{5}{12}$
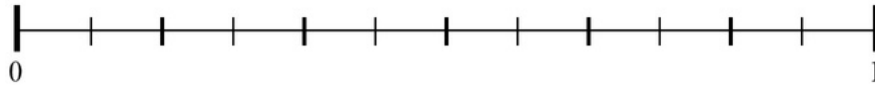
33. If you can find an equivalent fraction, write it. If you cannot, cross the whole problem out.

a. $\dfrac{5}{6} = \dfrac{\ }{20}$	b. $\dfrac{2}{7} = \dfrac{\ }{28}$	c. $\dfrac{3}{8} = \dfrac{15}{\ }$	d. $\dfrac{2}{9} = \dfrac{6}{\ }$

34. Find the errors in Mia's calculation and correct them.

"I need these to have the same denominator."

$\dfrac{2}{5}$ + $\dfrac{2}{3}$

↓   ↓

$\dfrac{2}{15}$ + $\dfrac{2}{15}$ = $\dfrac{4}{15}$

35. Add and subtract the fractions and mixed numbers.

a. $\dfrac{1}{3} + \dfrac{5}{6}$	**b.** $\dfrac{4}{5} - \dfrac{1}{3}$
c. $6\dfrac{1}{8} - \dfrac{1}{2}$	**d.** $6\dfrac{7}{9} + 3\dfrac{1}{2}$

36. You need 2 3/4 cups of flour for one batch of rolls.
    Find how much flour you would need for three batches of rolls.

37. Compare the fractions, and write < , >, or = in the box.

a. $\dfrac{6}{9} \ \square \ \dfrac{6}{13}$ **b.** $\dfrac{6}{13} \ \square \ \dfrac{1}{2}$ **c.** $\dfrac{5}{10} \ \square \ \dfrac{48}{100}$ **d.** $\dfrac{1}{4} \ \square \ \dfrac{25}{100}$ **e.** $\dfrac{5}{7} \ \square \ \dfrac{7}{10}$

38. Simplify the following fractions if possible. Give your answer as a mixed number when you can.

a. $\dfrac{21}{15} =$	**b.** $\dfrac{29}{36} =$	**c.** $\dfrac{42}{48} =$

39. Is the following multiplication correct?
    If not, correct it.

$\dfrac{2}{3} \times$ $=$

40. Multiply the fractions

a. $\dfrac{1}{3} \times \dfrac{5}{6}$

b. $\dfrac{2}{9} \times \dfrac{2}{3}$

41. How many 1/4 ft pieces can you cut
    from a string that is 15 feet long?

42. Three people share half a pizza evenly. What fractional
    part of the original pizza does each one get?

43. Solve. Give your answer as a mixed number and simplified to lowest terms.
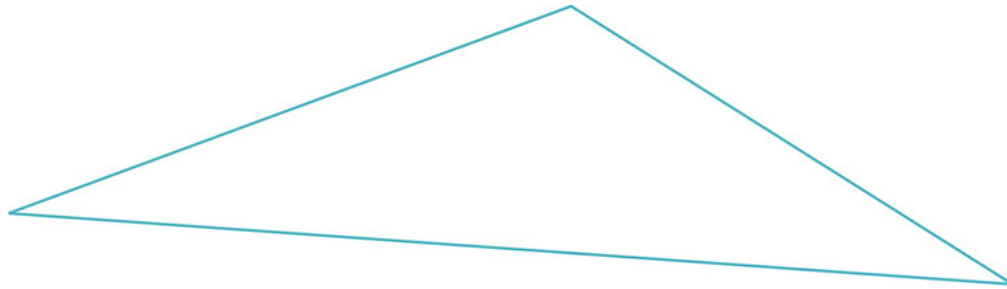
a. $\dfrac{7}{6} \times 9$

b. $\dfrac{1}{7} \div 3$

c. $\dfrac{4}{5} \times 3\,\dfrac{2}{3}$

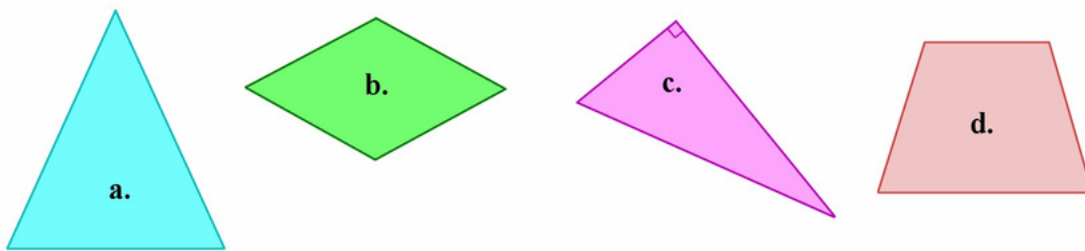**d.** $2 \div \dfrac{1}{9}$

Geometry

44. Measure the sides of the triangle in inches. Find its perimeter.

45. Below you see two triangles and two quadrilaterals. Classify the triangles according to their sides and angles. Name the quadrilaterals.

a. _____

b. _____

c. _____

d. _____

46. **a.** A square has a perimeter of 12 m. What is its area?

   b. A square has an area of 25 ft2. What is its perimeter?

47. Is a square a trapezoid? Why or why not?

48. Can an obtuse triangle be isosceles?
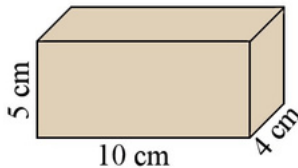   If not, explain why not.
    If yes, sketch an example.

49. **a.** Draw a right triangle with 5 cm and 7 cm perpendicular sides.

    b. Find its perimeter.

    c. Measure its angles. They measure _____°, _____°, and _____°.

50. This is a rectangular prism.
    Find its volume.

5 cm

10 cm

4 cm

51. Matthew has a rainwater collection tank in his yard that is rectangular,
    like a box. It is 1.2 m long, 60 cm wide, and 1 m tall.

    a. Find the volume of the tank in cubic meters.

    b. After a rainy night, the tank was about 1/3 full.
    About how many liters of water were in the tank?
    1 cubic meter equals 1,000 liters.