

**Summer Math Review 2017**  
*For Section 12 Discrete Math*

- *Work on a separate sheet of paper.*
- *Show all work.*
- *You should not use a calculator for this work.*

1. Express in decimal form:

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

b.  $.3\%$

c.  $2.7 \times 10^{-3}$

2. Find the value of

a.  $2 + 3 \times 4$

b. 30 divided by  $\frac{1}{2}$

c.  $2^3 + 3^2$

d.  $\frac{1}{2} \cdot \frac{3}{5} \cdot \frac{5}{7} \cdot \frac{7}{9} \cdot \frac{9}{11}$

e.  $3[4 - (2 - 5)]$

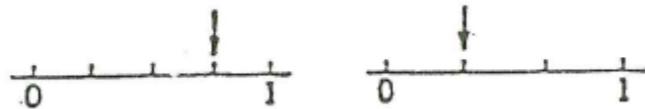
f.  $5\frac{3}{4} - 1\frac{3}{8}$

g.  $1\frac{1}{2} \div 1\frac{1}{3}$

h.  $\frac{14-1386}{14-1386}$

3. How much will a buyer pay for a \$79.95 camera on sale for 30% off?
4. 45% of Mr. Malcolm's students got an A or a B. If 54 of his students earned an A or a B, how many students does he have?
5. In a certain town of 2500 people, 40% of the population are registered voters, and 30% of the registered voters voted in the 1978 election. The number of townspeople who voted in 1978 was \_\_\_\_\_.
6. Circle the largest of the following numbers:  $\frac{61}{125}$ ,  $\frac{143}{290}$ ,  $\frac{80}{150}$ .

7. Each of the two scales below is divided into equal intervals. What is the least common denominator of the fractions indicated by the arrows?



8. If the markings on the number line below are equally spaced, then  $N =$  \_\_\_\_\_.



9. Solve each equation:

a.  $2k + 5 = 4k - 7$

b.  $\frac{4d-9}{3} = 5$

c.  $\frac{4}{x} = \frac{x}{9}$

d.  $2x^2 - 3x - 2 = 0$

10. Simplify:

a.  $\frac{a}{b} \div \frac{1}{a}$

b.  $-2\sqrt{5} + 4\sqrt{5} - \sqrt{5}$

c.  $\frac{7}{c} - \frac{3}{d}$

d.  $(5\sqrt{3})^2$

e.  $\frac{5d+2}{4} - \frac{d-5}{3}$

11. Solve the system:

$$2x - y = 1$$

$$4x - 3y = 7$$

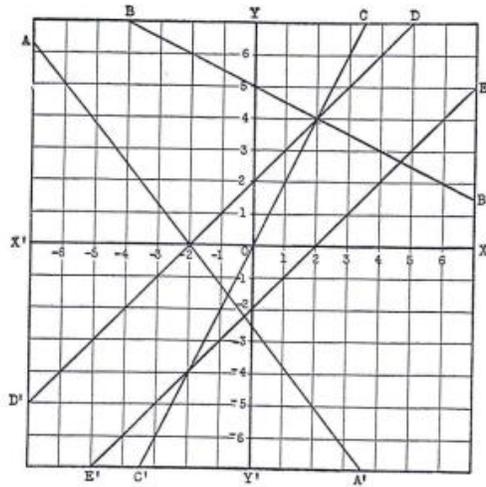
12. If the graph of  $3x + ky = 7$  passes through (5,4),  $k = \underline{\hspace{2cm}}$ .

13. The interest on  $d$  dollars for one year at 4% simple interest is \_\_\_\_\_.
14. If  $x$  is an odd integer, the next larger odd integer is \_\_\_\_\_.
15. A rectangle is 4 units longer than it is wide. If its width is  $w$ , its area is \_\_\_\_\_.
16. If pencils are selling at 25 cents per dozen, how many cents do  $n$  pencils cost?
17. In a class of 38 students, the number of boys is 2 less than 3 times the number of girls. How many boys are there?
18. In a drill-manufacturing plant, this month's production is up  $33\frac{1}{3}\%$  over last month's. This means that, if 7200 drills are produced this month, the number produced last month was \_\_\_\_\_.
19. If a property tax varies directly as the assessed valuation of the property, and if the tax on property assessed at \$60000 is \$420.40, what is the tax on property assessed at \$75000?
20. The number of men and women at a dance was 114. If there had been 4 times as many men, and 5 times as many women as there actually were, the total attendance would have been 500. How many men attended the dance?

21. A store's sales totaled \$340 on the first day of a four-day sale, \$250 on the second day, and \$325 on the third day. If the average sales per day for the four days were \$300, what were the total sales on the fourth day?
22. Three towns agree to contribute a total of \$12,000 for a recreation center. This amount is to be divided among the towns in proportion to their populations. If Town A has 20,000 inhabitants, Town B has 10,000 , and Town C has 30,000, Town A's contribution will be \_\_\_\_\_.
23. A bicyclist left a hostel camp at 9 A.M. and traveled at 12 mph. At 11 A.M. it was necessary to notify him of a telephone call he had received at the camp. How many miles per hour would a car have to travel to reach him by noon?
24. Two boy-scout troops are engaged in collecting old newspapers. The first week Troop A collects twice as much as Troop B, and the second week Troop B collects 30% more than Troop A. If 540 pounds altogether are collected the first week and 460 pounds the second week, how many pounds does Troop A collect in total?

*Problem 26 is on the next page...*

26. Refer to the graph below to answer the following:



- Which three lines have equations with a common solution?
- What is the solution of the system of equations represented by the lines  $CC'$  and  $EE'$ ?
- On line  $DD'$ , the value of  $x$  when  $y = -1$  is \_\_\_\_\_.
- The graph of the equation  $y = -\frac{5}{4}x - 2\frac{1}{2}$  is line \_\_\_\_\_.