

MATHEMATICS (8TH Grade)—JUNE 1957 (1)

Part I

Answer all questions in this part. Write the answer to each question on the line at the right. Questions 1-20 count 2 credits each; no partial credit is allowed. Questions 21-30 count 1 credit each. Reduce each answer to its simplest form.

1. Find the sum of: 846, 3215, 42, 937
2. Divide 1.812 by .06
3. Multiply $12\frac{1}{4}$ by $3\frac{1}{7}$.
4. Subtract \$4.63 from \$10.
5. Change $\frac{9}{8}$ to a decimal correct to the nearest thousandth.
6. Subtract $5\frac{3}{8}$ from $17\frac{1}{2}$.
7. Write in figures: three million eighty thousand.
8. How many more ounces of cheese are there in a 10-ounce package than there are in a half-pound package?
9. If the total weight of an 11-man football team is 1,815 pounds, what is the average weight in pounds of each man on the team?
10. Which of the following has the largest value: $\frac{5}{8}$, .75, 80%?
11. What is the largest number of containers, each having a capacity of $\frac{1}{2}$ pint, that can be filled from a gallon jug full of milk?
12. A parking lot charges 25 cents for the first half hour of parking and 10 cents for each additional half hour. A man parked his car from 1:45 p.m. to 3:15 p.m. What was his parking charge?
13. Plans are being made to construct a building a mile high. The elevators in this building are expected to go from street level to the top in one minute. Express this speed in feet per second.
14. A chair whose total cost to a dealer was \$32 was sold at a profit of \$18. Find the percent of profit based on the selling price.
15. A distance of 25 miles is represented on a map by $2\frac{1}{2}$ inches. On this map, how many miles are represented by 1 inch?
16. A woman bought groceries amounting to \$2.73 and gave the clerk 3 one-dollar bills in payment. The clerk could not make the change, so the woman gave him 3 cents more. How much change did she then receive?
17. A \$500 bond pays $3\frac{1}{2}\%$ interest annually. How much interest is paid each year?
18. According to the 1950 census, 14,830,192 people were living in New York State. Round off this number to the nearest thousand.
19. A library contains 60 books of biography. If this number is 5% of the total number of books on the shelves, how many books are there in the library?

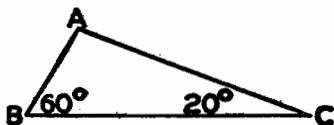
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20. A man has a \$5,000 life-insurance policy on which he pays a premium of \$19.36 per thousand each year. Find his annual premium.

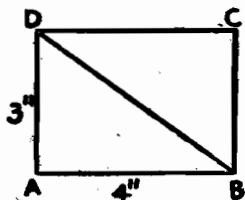
Directions (21-30): Indicate the correct completion for each of the following by writing on the line at the right the letter *a*, *b* or *c*.

21. The angles formed by two perpendicular lines are (a) acute angles (b) right angles (c) obtuse angles

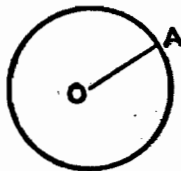
22. In triangle *ABC* angle *A* is equal to (a) 100° (b) 280° (c) 60°



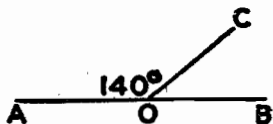
23. The length in inches of diagonal *DB* of rectangle *ABCD* is (a) 25 (b) 7 (c) 5



24. In the circle whose center is *O*, the line *OA* is a (a) diameter (b) radius (c) chord



25. *AB* and *CO* are straight lines. Angle *AOC* is equal to 140° . The number of degrees in angle *COB* is (a) 40 (b) 70 (c) 140



26. The formula for finding the perimeter *p* of a square whose side is *s* is (a) $p = 4s$ (b) $p = s^2$ (c) $p = 2s^2$

27. To solve the equation $\frac{a}{3} = 6$, a student should (a) subtract 3 from both sides of the equation (b) multiply both sides of the equa-

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tion by 3 (c) divide both sides of the equation by 3

28. A certain number is represented by x . A number 5 less than twice this number is (a) $2x - 5$ (b) $5x - 2$ (c) $3x$

29. If $c = 3$, the value of $5c^2$ is (a) 225 (b) 45 (c) 30

30. The expression $4x + 4 - 3x - 2$ is the same as (a) $7x + 6$ (b) $x + 6$ (c) $x + 2$

Part II

Answer any five questions from this part. No credit will be allowed unless all necessary operations are given. Reduce each result to its simplest form and mark each answer Ans.

31. A washing machine priced at \$300 was reduced 25% in price just before the new model came out. In addition, a 10% discount for cash was allowed. What was the actual cash price the buyer paid for this machine? [10]

32. John Doe purchased from the Hobby Supply Shop a supply of balsa wood costing \$2.25. He paid for the purchase by check. The stub and the check below are from Mr. Doe's personal checkbook. List the letters *a-j* on your answer paper. After each letter write the words or numbers exactly as they should appear in the place indicated by the corresponding letter on the stub or check: [10]

No. <u>146</u> <u>June 1</u> 19 <u>57</u> TO <u>(a)</u> FOR <u>(b)</u> Balance For'd.....\$ <u>275.62</u> Deposited.....\$ <u>25.00</u> Total.....\$ <u>(c)</u> This Check.....\$ <u>(d)</u> Balance.....\$ <u>(e)</u>	Bank of Our Town <hr style="width: 20%; margin: auto;"/> Our Town, N.Y. <u>June 1 1957</u> No. <u>(f)</u> Pay To The Order Of <u>(g)</u> \$ <u>(h)</u> <u>(i)</u> Dollars <u>(j)</u>
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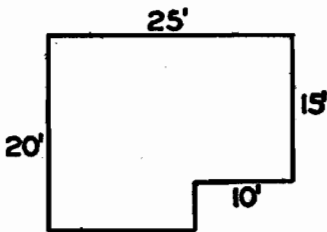
33. A man does piecework in a factory. This means that he is paid a fixed amount for each article he completes. During one week of 5 working days he completed 3,488 motor parts for which he was paid $2\frac{1}{2}$ cents each.

a. Find his gross earnings for the week. [6]

b. Find his average daily rate of pay during that week. [4]

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34. The floor plan of the living room and dining area in a new home is shown at the right. The family buying the home wishes to cover the floor completely with carpeting that sells for \$15.75 per square yard.

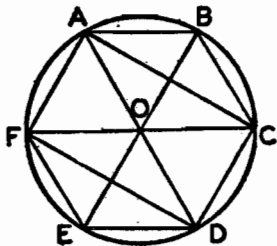


- a. How many square yards of carpeting will be needed? [7]
- b. What will be the total cost of the carpeting? [3]

35. A man is planning to remake his lawn next fall. The lawn, which is level and in the shape of a rectangle 90 feet long and 30 feet wide, is to be covered with topsoil to a depth of 3 inches.

- a. How many cubic feet of topsoil will the man need? [6]
- b. If he carts the topsoil in a small truck which holds a cubic yard (27 cubic feet), how many full loads will he need? [4]

36. In the diagram, O is the center of the circle. Straight lines AD , BE , and CF are drawn through O and divide the circle into 6 equal arcs. AC and FD are drawn.



List the numbers 1-5 on your answer paper. After each number write true if the corresponding statement is true. If the statement is false, write the word that must be substituted for the italicized word to make the statement true. [10]

- (1) Figure $ABCDEF$ is a *hexagon*.
 - (2) Angle BOC is a *right* angle.
 - (3) AD is a *diameter* of the circle.
 - (4) Triangle FOD is an *acute* triangle.
 - (5) Triangle AOC is an *isosceles* triangle.
37. a. In an eighth grade election for class president the winner received 65 more votes than the loser. If n represents the number of votes cast for the loser,
- (1) express in terms of n the number of votes cast for the winner [1]
 - (2) express in terms of n the total number of votes cast in the election [2]

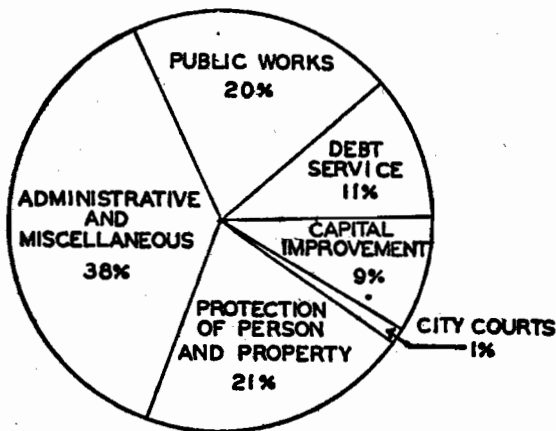
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b. If 275 votes were cast for both candidates in the election mentioned above,

- (1) write a correct equation which can be used to find the value of n [4]
- (2) solve this equation for n [2]
- (3) find the number of votes cast for the winner [1]

38. In a large city the breakdown of the \$28,800,000 raised by means of real estate taxes, for all purposes except schools, is shown in the graph below. To raise this sum, the tax rate was set at \$21.95 per \$1,000 of assessed valuation. Use this information and the graph below to answer the following questions.

DISTRIBUTION OF TAX MONEY/



- a. Mr. Brown, a taxpayer in this city, owns real estate assessed at \$6,000. Find the amount of his real estate tax. [3]
- b. On the basis of the tax breakdown shown in the graph, how much does Mr. Brown pay toward the operation of Public Works? [3]
- c. Find the amount of money required by this city to maintain "Protection of Person and Property." [4]