STANDARD VII: The student will be able to solve problems involving a variety of algebraic and geometric concepts.

OBJECTIVE

8. Solve problems involving algebraic concepts.

ELIGIBLE CONTENT

- Word problems will be used.
- Interpretation of figures may be required.
- The following content may be included:
  - distance-rate-time problems
  - money problems, which may require a system of equations
  - numbers (sum, difference, product, quotient)
  - simple age problems referring only to the present
  - consecutive integers
  - area, volume, dimension problems
  - quantity problems
  - cost problems
  - wage problems

SAMPLE ITEMS

1 Mr. Ward drove from his office to a business meeting at an average speed of 60 miles per hour. When he drove the same route on the return trip, his average speed was 55 mph, and the trip took $\frac{1}{4}$ hour longer. What was Mr. Ward' s total travel time?

A $2\frac{3}{4}$ hours

B 3 hours

C $5\frac{1}{2}$ hours

D $5\frac{3}{4}$ hours

2 Pants cost $5.00 more than shirts. If John buys 3 shirts and 3 pairs of pants for a total of $135, how much does one pair of pants cost?

A $18.33

B $20.00

C $23.33

D $25.00

3 A new savings account was opened with a deposit of $5000. Part of the money earned 4% interest and the remainder earned 9%. The account earned a total of $385 in simple interest during one year. How much money was invested to earn 9% interest?

A $1300

B $2500

C $3700

D $4500

4 The sum of 3 consecutive integers is 81. What is the value of the middle integer?

A 26

B 27

C 28

D 29

5 Ryan makes $3.00 per hour more than Scott. If 3 times Ryan' s rate plus 4 times Scott' s rate is $65.00, what is Ryan' s hourly wage?

A $7.57

B $8.00

C $9.71

D $11.00

6 The volume of a telephone book is 198 cubic inches. The book is 2 inches thick and the pages are 2 inches longer than the width. What is the width of the telephone book?

A $8\frac{1}{2}$ inches

B 9 inches

C $10\frac{1}{2}$ inches

D 11 inches

7 The area of a rectangular lot is 112 square feet. The width is 6 feet less than the length. What is the length of the lot?

A 7 feet

B 8 feet

C 14 feet

D 24 feet

8 John is 3 times as old as Beth. The sum of their ages is 36. How old is John?

A 9

B 12

C 18

D 27

9 The sum of two numbers is 58. The difference between three times the small number and the larger number is 38. What is the value of the smallest number?

A 5

B 10

C 12

D 24