### Exercises [A–1]

1. One number is 4 times another. The sum of the two numbers is 10. Find the numbers.
2. The ratio of two numbers is $\frac{4}{5}$. Three times the smaller plus twice the larger equals 550. Find the numbers.
3. The sum of the numbers of degrees in the three angles of a triangle is 180. The size of the smallest angle is $\frac{1}{5}$ of that of the largest and $\frac{1}{3}$ of that of the middle-sized one. How many degrees in each angle?
4. Max is 8 years older than Bob. In 3 years he will be twice as old as Bob. How old is each now?
5. Four times a number is 1 less than 7 times another number. Eight times the larger number is 5 less than 15 times the smaller. Find the numbers.
6. Six per cent of one number diminished by 1% of another leaves 9. Five per cent of the first increased by 3% of the second equals 19. Find the numbers.
7. The length of a rectangle exceeds its width by 20 inches. The perimeter is 360 inches. What are the length and the width?
8. A man invests some money at 5% and another amount at 6%. If the total annual income is \$215 and the total amount invested is \$4000, how much was invested at each rate?
9. The sum of two numbers is $-3$. If the larger is diminished by 5 times the smaller, the result is 21. Find the numbers.
10. Nineteen times one number plus 13 times a second number gives 56. Eleven times the first increased by 8 times the second gives 40. Find the numbers.
11. The perimeter of a triangle is 30 inches. Two sides are equal in length, and the third side is half as long as one of the equal sides. Find the lengths of the sides of the triangle.
12. Find $x$ and $y$ if 5% of $x$ exceeds 2% of $y$ by 3.60 and $x$ exceeds $y$ by 12.

### Exercises [A–2]

1. The sum of two numbers is 892. Their difference is 490. Find the numbers.
2. Six times the smaller of two numbers exceeds the larger by 6. The sum of the numbers is 29. Find the numbers.

3. Two angles of a triangle contain the same number of degrees. The third angle contains 30 more degrees than either of the first two. How many degrees in each angle?
4. A is 3 years older than B. Four years from now the sum of their ages will be 33. Find their present ages.
5. If 3 times one number is added to 4 times a second number, the sum is $-10$. Four times the first exceeds 3 times the second by $-5$. Find the numbers.
6. The sum of two numbers is 3. The sum of 7% of one and 8% of the other is zero. Find the numbers.
7. Five times one number exceeds 2 times a second number by 24. Twice the first exceeds 3 times the second by 31. Find the numbers.
8. Two investments total \$2000. One yields 8% income and the other $3\frac{1}{2}$%. The total annual income is \$92.50. How much is invested at each rate?
9. The sum of two numbers is 20. Four hundred times the first plus 70 times the second equals 4040. Find the numbers.
10. The sum of two numbers is 11. If the smaller is added to 10 times the larger and the larger is added to 10 times the smaller, then the first sum exceeds the second sum by 27. Find the two numbers.
11. The ratio of the bases of a trapezoid is 2. The nonparallel sides are equal and each one is 80% of the shorter base. The perimeter is 73.6 inches. How long is each side of the trapezoid?
12. Find two positive numbers if their ratio is 5 and they differ by 12.

### Exercises [B]

1. Bob, Betty, and Susan have a total of \$34. Betty has \$2 more than Bob. Bob has half as much as Susan. How much has each?
2. Jim has 19 coins consisting of half-dollars, quarters, and dimes. The number of quarters is twice the number of half-dollars. If he has \$4.70 altogether, how many coins of each kind has he?
3. C's age now exceeds the sum of the ages of A and B by 6. Five years from now A's age will be half of C's present age. Five years ago, A's age was $\frac{1}{3}$ of what B's age will be 5 years hence. Find their ages now.
4. Six times the difference of two positive numbers exceeds 4 by 21. Three times their sum equals 8 times the smaller number. Find the numbers.

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1. 2, 8
2. 100, 125
3. 20°, 60°, 100°
4. Max, 13 yr.; Bob, 5 yr.
5. 3, 5
6. 200, 300
7. $\ell$ = 100 in.; w = 80 in.
8. $2500 at 5%, $1500 at 6%
9. 1, -4
10. -8, 16
11. 12 in., 12 in., 6 in.
12. x = 112, y = 100

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1. 201, 691
2. 5, 24
3. 50°, 50°, 80°
4. A, 14 yr.; B, 11 yr.
5. -2, -1
6. -21, 24
7. $\frac{10}{11}$, $-9\frac{8}{11}$
8. $500 at 8%; $1500 at $3\frac{1}{2}$%
9. 8, 12
10. 4, 7
11. Bases, 16 in. and 32 in.; nonparallel sides, 12.8 in.
12. 3, 15

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1. Bob, $8; Betty, $10; Susan, $16
2. 7 dimes, 8 quarters, 4 half-dollars
3. A, 12 yr.; B, 16 yr.; C, 34 yr.
4. $6\frac{1}{4}$, $10\frac{5}{12}$