

15. One drummer offers to sell me \$1500 worth of iron pipe at a discount of 25%, 10%, and 10%; another offers to sell me a similar quantity of pipe for the same amount less 20%, 20%, and 5%. Which is the better offer, and what is the difference expressed in dollars?

16. Having bought \$1500 worth of merchandise at 20% and 25% off, I sold it for \$1500 less 15%, 10%, and 20% off. Did I gain or lose, and how much?

What single discount is equivalent to the following discount series?

- |                                |                                     |
|--------------------------------|-------------------------------------|
| 17. 10% and 10%                | 22. 20%, 25% and 10%                |
| 18. 20% and 10%                | 23. 25%, 33 $\frac{1}{3}$ % and 10% |
| 19. 10% and 5%                 | 24. 20%, 20% and 10%                |
| 20. 25% and 20%                | 25. 50%, 20% and 5%                 |
| 21. 33 $\frac{1}{3}$ % and 10% | 26. 30%, 20% and 10%                |

### Short Method

To find, mentally, a single discount equivalent to a series of two discounts.

*Rule.* From the sum of the discounts subtract  $\frac{1}{100}$  of their product

When a third discount is given, combine it with the result obtained from the other two.

*Note*—While this method is useful in making comparisons, it cannot be used in invoicing. If two or more discounts are allowed on a bill they must be taken off one after another as first illustrated.

By inspection find a single rate of discount equivalent to the following discount series:

- |                 |                                |                                |
|-----------------|--------------------------------|--------------------------------|
| 27. 20% and 10% | 32. 20% and 12 $\frac{1}{2}$ % | 37. 10% and 12 $\frac{1}{2}$ % |
| 28. 10% and 10% | 33. 20% and 20%                | 38. 10% and 6%                 |
| 29. 25% and 10% | 34. 25% and 25%                | 39. 15% and 6%                 |
| 30. 30% and 10% | 35. 5% and 5%                  | 40. 25% and 8%                 |
| 31. 20% and 5%  | 36. 60% and 25%                | 41. 33 $\frac{1}{3}$ % and 6%  |

### The Six Per Cent. Method for Interest

This method is formed on a basis of 360 days to the year. The following facts will be self-evident:

At 6% per annum the interest of \$1.

- Fact 1.—For 1 year, or 360 days, is 6c. = .06 of the principal.  
 " 2.—For  $\frac{1}{2}$  year, or 60 days, is 1c. = .01 of the principal ( $\frac{1}{6}$  of .06).  
 " 3.—For  $\frac{1}{3}$  year, or 30 days, is 5m. = .005 of the principal ( $\frac{1}{2}$  of .01).  
 " 4.—For 6 days, is 1m. = .001 of the principal ( $\frac{1}{6}$  of .005).  
 " 5.—For 1 day, is  $\frac{1}{6}$  m. = .000 $\frac{1}{6}$  of the principal ( $\frac{1}{6}$  of .001).

From these facts we deduce following general rules:

1. The interest for 1 day at 6% is found by removing the decimal point 3 places to left in the principal and dividing the result by 6. (See Fact 5.)
2. The interest for 6 days at 6% is found by removing the decimal point 3 places to left in principal. (See Fact 4.)
3. The interest for 30 days at 6% is found by removing the decimal point two places to the left in the principal and dividing the result by 2. (See Fact 3.)
4. The interest for 60 days at 6% is found by removing the decimal point two places to the left in the principal. (See Fact 2.)

Since interest in Canada is reckoned upon a basis of 365 days to the year, the interest found by the "Six Per Cent. Method," which is based upon the supposition that 360 days make a year, is not strictly accurate.

Since the year contains 365 days, the interest, found by the Six Per Cent. Method for 360 days to the year, is  $\frac{360}{365}$  or  $\frac{72}{73}$  part of itself too large.

If the Six Per Cent. Method is used the result must be decreased by  $\frac{1}{73}$  to get the accurate interest.