

Instructions: This is a list of some material that is essential prerequisite for this course. That is, your instructor expects that you have a definite idea of the notions expounded below and that you be able to solve the problems below without any review. If you find yourself having trouble on some items below you should seek immediate help from your instructor or from the tutors in the Learning Laboratory.

Essential prerequisites include:

- (a) You should be able to do simple arithmetic problems mentally.
 - (b) You should be able to estimate the magnitude of a string of arithmetic operations.
 - (c) You should be able to solve one-variable linear equations.
 - (d) You should familiarise with the 52-cards of an ordinary (French) deck of cards.
 - (e) You should familiarise with the 28 domino pieces.
 - (f) You should know that the opposite faces of a regular die add up to 7.
 - (g) You should know the rules of divisibility by 2, 3, 4, 5, 6, 8, 10.
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You should be able to quickly answer all questions below without needing any review.

1. $\frac{1}{4} + \frac{2}{13} + \frac{17}{52} =$
2. $\frac{13}{52} \cdot \frac{4}{52} =$
3. $\frac{28}{52} \div \frac{4}{52} =$
4. $\frac{\frac{10}{26}}{\frac{13}{52}} =$
5. Solve for x : $x + 2x + 3x + 4x = 1$.
6. Suppose $A = x$, $B = 2x$, $C = 4x$, and that $A + B + C = 1$. Find the values of A , B , and C .
7. Reduce the following fraction to lowest terms: $\frac{(20 \cdot 19 \cdot 18 \cdot 17)}{(1 \cdot 2 \cdot 3 \cdot 4)}$.
8. For which strictly positive d integers is $\frac{12}{d+1}$ an integer?