

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 perform arithmetic operations with signed numbers.
 - (b) You should be able to solve linear equations.
 - (c) You should be able to recognize equations of straight lines and draw these lines.
 - (d) You should be able to solve quadratic equations by factoring.
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You should be able to quickly answer all questions below without needing any review.

1. Perform the indicated operations:

(a) $-6 + 2(-5)$

(b) $-8 - (-3)$

(c) $\frac{3}{5} + \frac{2}{x}$

(d) $\left(-\frac{3}{5}\right)\left(-\frac{2x}{7}\right)$

2. Write $\sqrt{x^3}$ using rational exponents.

3. Reduce the fraction: $\frac{x^2}{x^2 - x}$.

4. Write using a single exponent: x^2x^3 .

5. Factor completely: $2x^3 - 4x^2$.

6. Solve the equation $x^2 - 7x + 12 = 0$.

7. Expand and collect like terms: $(2x + 3)^2$.

8. Graph the curve $y = 3x - 9$.

9. Solve for x : $3x - 7 = x + 9$.