Algebra Basics

Question 1. Perform the following operations.

a) $2 + 3 + 8$
b) $3 + (-7)$
c) $5 - 4 - 5$
d) $-12 - (-6)$
e) $2 - 7$
f) $3 - 4 + 2$
g) $-5 + 7 + (-2)$
h) $2 - (-3)$

Question 2. Perform the following operations.

a) $4 \div 2$
b) $12/4$
c) $(-8) \div 2$
d) $(-20)/(-5)$
e) $2(7)$
f) $3 \times (-5)$
g) $(-2)(-10)$

Question 3. Find the following absolute values.

a) $|3|$
b) $|-6|$
c) $|0|$
d) $-|3 - 7|$
e) $|12 - 3|$

Question 4. Evaluate the following expressions.

a) $2 - 3 \times 5$
b) $2 \times (4 - 2)$
c) $(5 - 3) \times (1 - 6)$
d) $3 - 20 \div 4$
e) $\dfrac{2 \times 10}{6 + 2 \times 7}$

Question 5. Find the multiplicative inverse of the following numbers.

a) $\dfrac{1}{4}$
b) $\dfrac{2}{3}$
c) -10
d) -1
e) $\dfrac{4}{5}$

Question 6. Simplify the following expressions as much as possible.

a) $x^2 + 2x^2 + x - 5x + 6 + 3 - 1$
b) $x^4 - x^2 + x^3 + x^4 + x^2 + 4x - 2 + x + 3$
c) $5x + 2y + 6xy - 7y - x - 3xy$
d) $4x \times 2x \times 3x$
e) $\dfrac{21x}{3}$
f) $12x^4 \div 3x^2$

Question 7. Perform the following multiplication and division operations.

a) $\dfrac{x \times x^3}{x^2}$
b) $\dfrac{4x^4}{2x^3}$
c) $\dfrac{x \times 6x^{10}}{(-2x^5)}$
d) $x(3 - 2y)$
e) $-5(3 - 7x)$
f) $4x(-3x^2 + 2x + 6y)$

You can check your answers on page 266.