

Intermediate Algebra Questions (worksheet 6)

Q2. Answer by TRUE or FALSE.

- (a) (.....) 1 is the multiplicative identity.
- (b) (.....) The additive inverse of -4 is $\frac{1}{4}$.
- (c) (.....) The equation $|x - 1| = -1$ has two solutions.
- (d) (.....) $2^0 = 1$.
- (e) (.....) $(-4)^2 = -4^2$.
- (f) (.....) The equation $x^2 = -4$ has no solutions.
- (g) (.....) $|-|-2|| = 2$.
- (h) (.....) $\sqrt{-16} = -4$.
- (i) (.....) $\frac{10}{0}$ is undefined.

Q3. Evaluate the following expressions:

a. $|67 - 12(7 - 9)| - |23 - 43|$

b. $12 + \sqrt{-9 + 15 \times 5 \div 3}$

c. $-5^2 - [7 - 3(8 - 2^3)]^2$

Q4. Simplify the following expressions.

a. $3x(-x + 1) - 5(x - 3) + 8x^2$

b. $(10x^6)^3(x + 2y)^0$

c. $\frac{54(x^7y^3)^2}{(-3x^5y^{-4})^3}$

Q5. Solve the following equations.

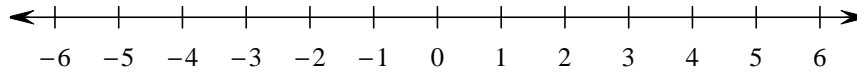
a. $5 + 3(x - 1) = 3x - 2(x - 3)$

b. $\frac{2x}{3} = -6 - \frac{x - 4}{5}$

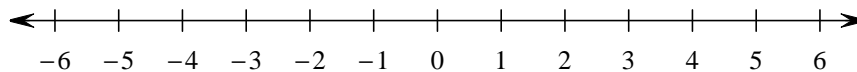
c. $|3x - 8| - 3 = 4$

Q6. Solve the following inequalities and write the solution set in **interval notation** and **graph** it.

a. $12x - 2 < 7x - 17$.



b. $9 < 3 - 2(x - 5) \leq 21$.



Q7.

a. Find A so that $2x + 6 = 2(x + A)$ is an identity.

b. Find B so that $-3x + 10 = (B + 1)x + 13$ is an inconsistent equation (an equation with no solutions).

Q8. The perimeter of a rectangular field is 120 meters. Its length is 10 meters more than its width.

Find the length and width of this rectangle?

Q9. Going for a long trip, Joshwa drove for 3 hours and had lunch. After lunch he drove for 4 more hours at a speed that is 10 km/h more than before lunch. The total trip was 600 km.

a. What was his speed before lunch?

b. What distance did he drive after lunch?