Intermediate Algebra Questions (worksheet 3)

Q1. Determine whether each statement is **true** or **false**.

(a) $18 - 4 \div 2 = 16$.

(b) $|-5-3| = -8$.

(c) 7.3×10^{-3} is the scientific notation of the number 0.0073.

(d) $(3+9)^0 = 0$.

(e) $x = 2$ is a solution of the equation $x + 2 = 4$.

(f) $x = 3$ is a solution to the inequality $x + 2 > 9$.

(g) For all x, $(x^2)^3 = x^5$.

(h) $(-3)^2 = -9$.

(i) $x + 2 = 3$ is an equation.

Q2. Evaluate the expressions.

(a) $10 \div 2 + 4 \cdot (-5) - 12$

(b) $2|-2-(-6)| \div 4$

(c) $(\sqrt{3+6}+1)^2 \div 2 - 1$

Q3. Simplify the following.

(a) $(a^2b^2)(a^4b^{-2})$

(b) $\dfrac{(a^5b^{20})^0(4a^2b^3)^2}{8a^3b^3}$

(c) $3(a+b+a^2)-2(a-b)$

Q4. Solve the equations.

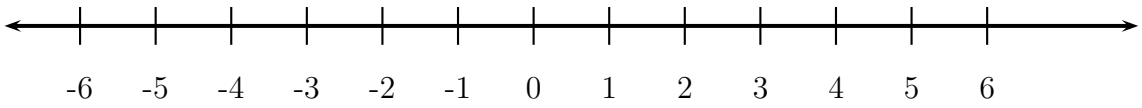
(a) $3(x+1)-8=x+3$.

(b) $\dfrac{x+1}{3}+\dfrac{1}{2}=\dfrac{5}{2}$.

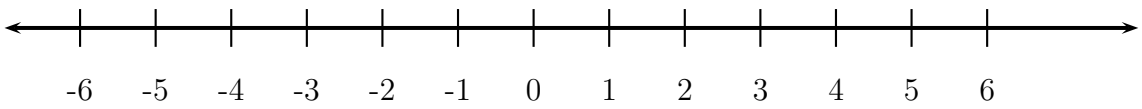
(c) $|2x+3|=5$.

Q5. Solve and graph the solution set of the inequalities.

(a) $4(1+x)-2 \leq 6$



(b) $|2x+1| \leq 3$



Q6. Malek drove for 2 hours then stopped for a break. After that, he drove for 3 hours at a speed 10 miles per hour (mph) more than the speed before the break. The total distance he drove was 280 miles. What was Malek's speed before the break?

Q7. Evaluate the expression $\dfrac{a+b}{a-b}$ for $a = 4$ and $b = 2$.

Q8. **Solve** and identify each equation as a **conditional equation**, an **inconsistent equation** or an **identity**. Explain your answer.

(a) $2x + 3 = 2(x + 1)$

(b) $3x + 4 = 3(x + 1) + 1$

(c) $3x - 3 = 6$