

Spring, 1999
Peterson

MATH 105.

HOMEWORK 5.

DUE: Friday, Feb. 26.

P1. Solve the following inequalities. Write your final answers in interval notation.

(1) $-3 < 5(x + 2) - 3(x + 1) \leq 11$.

(2) $-5 < \frac{1 - 2x}{3} < 9$.

(3) $5x - 2 < 18$ OR $3x - 7 > 17$.

(4) $2x - 3 < 7$ AND $1 - 3x < 10$.

(5) $|2x - 7| > 11$.

(6) $|3x - 2| \leq 1$.

P2. Simplify the following numerical expressions. Answers need to be expressed as fractions. No decimal answers are acceptable.

(1) 3^{-2} (2) $5 \cdot 3^{-2}$ (3) $8 \cdot 4^{-3}$ (4) $2^{-3} \cdot 6^2$.

P3. Assume that $a > 0$, $b > 0$, and $c > 0$. Simplify the following expressions. Final answers must not involve negative exponents. All fractions need to be in reduced form.

(1) $(a^2 b^3)^2 a^7$.

(2) $a^3 b^{-2} a^{-4} b^3$.

(3) $(a^{-1} b^3 c^{-2})^2 (a^3 b^{-1} c^3)^3$.

(4) $(a^{-2} b c^3)^{-2} (a^{-3} b^4 c^8)$.

(5) $\frac{a^2 b^5 c^2}{a b^3 c^5}$.

(6) $\frac{a^{-2} b^3 c^{-1}}{a^2 b^{-1} c^{-5}}$.