MATH 118: Quiz 2

Name: Key

Directions:

- Show your thought process (commonly said as "show your work") when solving each problem for full credit.
- If you do not know how to solve a problem, try your best and/or explain in English what you would do.
- Good luck!

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1. Fully simplify the following:

$$\frac{(2x+1)(x-2)}{(2x+1)^{-2}(x-2)^{3}(2x-1)}$$

global context is all factors. Use LoE.

$$= \frac{(2x+1)^{1-(-2)} \cdot (x-2)^{1-3}}{(2x-1)} \quad \text{LoE ②}$$

$$= \frac{(2x+1)^{3} \cdot (x-2)^{-2}}{(2x-1)}$$

$$= \boxed{\frac{(2x+1)^{3}}{(x-2)^{2}(2x-1)}} \quad \text{LoE ⑦ or definition of } a^{-n}$$

this means factor whenever you can

2. Fully expand and simplify:

$$(x+1)(x-2)-(x+1)$$

$$= (x+1)\cdot x + (x+1)\cdot(-2) - x - 1 \quad \text{dist}$$

$$= x^2 + x - 2x - 2 - x - 1 \quad \text{dist}$$

$$= x^2 - 2x - 3$$

$a=1,\ b=-2,\ c=-3$

$$\begin{matrix} 1 & -3 \\ 1 & 1 \end{matrix}$$

$$= \boxed{(x-3)(x+1)} \quad \text{new } X$$

3. Completely factor the following:

$$x^2 + 6x - 8$$

quadratic; try new X.

$a = 1$, $b = 6$, $c = -8$

① 1
1

② -4 4 -8 8
2 -2 1 -1

③

$1 \quad -4$	$1 \quad 4$	$1 \quad -8$	$1 \quad 8$
$1 \quad 2$	$1 \quad -2$	$1 \quad 1$	$1 \quad -1$
↓	↓	↓	↓
-2	2	-7	7
no.	no.	no.	no.

Cannot factor (for now). Later we will see how to.

For now, just try all new X method possibilities.