MATH 161: Quiz 1

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. Completely expand and simplify the expression

$$(x+h) - (x+h)^2 - (x-x^2)$$

Subtracting ≥ 2 terms

$$= x + h - (x^2 + 2xh + h^2) - x + x^2$$

$$= x + h - x^2 - 2xh - h^2 - x + x^2$$

$$= h - 2xh - h^2$$

$$= \boxed{h \cdot (1 - 2x - h)}$$

2. Can I cancel the $(x-1)$ in

$$\frac{2(x-1)(x-3)(x+4)}{3x^2(x-1) + 4(x-3)^2}$$

Why or why not?

No. $(x-1)$ is not a global factor in the denominator.

3. Completely simplify the following:

* $4^{\frac{3}{2}}$

$4^{\frac{1}{2}} = \sqrt[2]{4^3} = \sqrt[2]{64} = 8$

* $(-3x(x+2))^2 \cdot ((x-1)x)^3$

not graded.

4. Completely factor the expression

$$-x^4 - 2x^3 - x^2$$

GCF

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

$(A+B)^2$

$= \boxed{-x^2(x+1)^2}$