Math 34A Winter 2020
Old Midterm 1 #3

No calculators

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Excellence
Bonus   /1

Score   /16

Put answers in the boxes provided. **Show high quality work** for **all answers**. Points may be awarded for this.

TA: ☐ Garo   ☐ Sam   ☐ Trevor   **Section Time:** ☐ 8am   ☐ 6pm
                                                    ☐ 5pm   ☐ 7pm

1. [/2] Solve for x in the equation $\dfrac{ax+7}{3x-4} = 5$.

$$x = \boxed{}$$

2. [/2] Multiply out and simplify

$$(2a+5b)(3a-4b)+5ab.$$

Check your answer.

Simplified version: $\boxed{}$

3. [/2] Substitute $x = (3 + 2/m)$ into $4m^2x - 3mx$. Simplify the result as much as possible.

Simplified version:

4. [/2] Solve for x and y in the simultaneous equations

$$3x + 2y = p \qquad 2x + 2y = 7.$$

Your answers will involve p only.

$x = $

$y = $

5. [/4] Jason leaves Moscow at noon driving to St. Petersburg on a road which is 700 km long. Marie leaves St. Petersburg at 1pm driving along the same road to Moscow. Marie's speed is 110 km/hr and Jason's speed is 150 km/hr.

(a) How many hours has *Marie* been driving when they meet? (Leave your answers as *fractions*).

Marie has been driving $\boxed{}$ hours.

(b) How many km apart are they 1 hour before they meet?

They are $\boxed{}$ km apart.

(c) How many hours has *Jason* been driving when they are 200 km apart?

Jason has been driving $\boxed{}$ hours.

6. [/4] A rectangle has length L and width W, perimeter $8X$ and area $3Y$.

(a) Express the length in terms of W and X.

$$L = \boxed{}$$

(b) Give the length in terms of W and Y.

$$L = \boxed{}$$

(c) Express W in terms of X and Y but not L. (Your answer should have a square root.)

$$W = \boxed{}$$