Math 34A Winter 2021
Entrance Quiz

Put your final answers in the

Score 8 / 10

No calculators

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provided on this page.

Scoring: A question is eigher completely correct (1 point) or wrong (0 points).

If you score under 4 on this test, you should consider dropping the class.
If you score 4–7, seek help **NOW**: maybe enroll in CLAS?
If you score 8–10, congratulations! You are ready for Math 34A.

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1. Solve for x in the equation

$$3(x+4) = k(x-2).$$

$3x + 12 = kx - 2k$

$3x + 12 - kx = -2k - 12$

$x = \frac{-2k-12}{3-k}$

$$x = \frac{-2k-12}{3-k}$$

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2. Multiply out and simplify. Check your answer.

$(1+x)(1-2x+x^2)$ $1 - 2x + x^2 + x - 2x^2$
$+ x^3 = 1 - x - x^2 + x^3$

$$x^3 - x^2 - x + 1$$

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3. Put over a common denominator and simplify.

$$\frac{2x+3}{3} - \frac{3x+2}{5}$$

$= \frac{5(2x+3) - 3(3x+2)}{15} \cdot \frac{10x+15-9x+1}{15}$

$= \frac{x+13-6}{15} = \frac{x+4}{15}$

$$\frac{x+9}{15}$$

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4. What is 25% of 4/3 of 12?

$$?$$

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5. Calculate

$$\frac{20}{\left(16 - \left(\frac{1}{3} \times \frac{1}{4}\right)^{-1}\right)^2} = \frac{20}{(16-12)^2}$$

$\frac{1}{12}$

$$\boxed{5/4}$$

$\frac{20}{4^2}$

$\frac{20}{16} = \frac{5}{4}$

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6. A car travels at 50 mph for 3 hours and at 60 mph for the rest of the journey. The length of the journey is 270 miles. How many hours did the entire journey take?

total $= 270$

$50(3) + 60(x) = 270$

$x = 2$

$$2 \quad \text{hours}$$

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7. Solve for x and y

$3x - 5y = -2$
$3\left(x + y = 10\right)$
$-3x - 3y = -30$

$-8y = -32$

$$x = 6$$

$$y = 4$$

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8. An entrepreneur bought 7 tons of apples for $100 per ton. She sold half the apples at a price of $200 per ton. She sold another ton for $150. The remainder she sold at $100 per ton. How much profit did she make?

$3.5 = \$200$ per ton
$1 = 150$
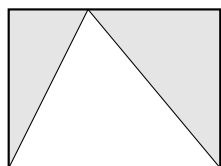$2.5 = \$100$

total $\$ = \$700$

$$\$ 400$$

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9. What is the area of the shaded region?

3 meters

4 meters

$$? \quad \text{square meters}$$

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10. If I earn $200,000 and pay $80,000 in tax, what percentage of what I earn do I keep?

keeps $\frac{120,000}{200,00} = .6 \times 100$

$= 60\%$

$$60 \quad \%$$