Abril Meza Galindo
Thurs. 2pm Sect.

Math 34A Winter 2021
Entrance Quiz

Put your final answers in the **boxes** provided on this page.

Score 9 / 10

03.31.22

No calculators

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.

---

1. Solve for x in the equation

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

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

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

2. Multiply out and simplify. Check your answer.

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

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

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

---

3. Put over a common denominator and simplify.

$$5\left(\frac{2x+3}{3}\right) - \left(\frac{3x+2}{5}\right)3$$

$\frac{10x+15}{15} - \frac{9x+6}{15}$

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

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

$\frac{4}{3} \cdot 12 = \frac{48}{3} = 16$
$\frac{16}{4} = 4$

4

---

5. Calculate

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

$\frac{20}{16 - (9-16)}$
$\frac{20}{16+7}$

9 16

$$\frac{20}{23}$$

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?

150 miles
$270 - 150 = 120$
$\frac{120}{60 \text{ mph}} = 2 \text{ hrs} + 3 \text{ hrs} = 5$

5 hours

---

7. Solve for x and y

$$3x - 5y = -2$$
$$x + y = 10$$

$x = 10 - y$
$3(10-y) - 5y = -2$
$30 - 3y - 5y = -2$
$30 - 8y = -2$
$-30 \quad -30$
$-8y = -32$
$y = 4$
$x = 10 - y$
$x = 10 - 4$
$x = 6$

$x =$ 6
$y =$ 4

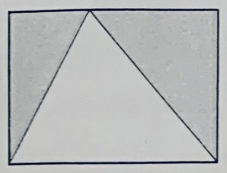
8. An entrepreneur bought 7 tons of apples for \$100 per ton. She sold half the apples at a price of \$200 per ton. She sold another ton for \$150. The remainder she sold at \$100 per ton. How much profit did she make?

$7 - 3.5 - 1 = 2.5$ tons
\$700 spent
3.5 tons · \$200 = \$700
1 ton · \$150
2.5 tons · \$100 = \$250
\$1100 sold − \$700 spent

\$ 400 profit

---

9. What is the area of the shaded region?



Area = $4 \cdot 3 = 12$
Triangle = $\frac{12 \text{ meters}^2}{2} = 6 \text{ meters}^2$
so shaded area is $12 - 6 \text{ meters}^2 = 6$

6 square meters

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

$\frac{\$200{,}000 - \$80{,}000}{\$200{,}000}$
$= \frac{\$120{,}000}{\$200{,}000} = \frac{\$120}{\$20} = 0.6 \times 100\%$

60 %