

Math 34A Winter 2021
Entrance Quiz

Put your final answers in the

Score

5 / 10

No calculators

provided on this page.

Scoring: A question is either 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

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

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

$$3x+4 = kx-2k$$

$$x = k-4$$

$$\frac{x}{1} = \frac{kx-2k-4}{1} \Rightarrow k-4$$

3. Put over a common

denominator and simplify.

$$10x+15 = 9x+6$$

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

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

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

2. Multiply out and simplify. Check your answer.

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

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

4. What is 25% of $\frac{4}{3}$ of 12?

5. Calculate

$$\frac{1}{3} - \frac{1}{4} = \frac{4}{12} - \frac{3}{12} = \frac{1}{12}$$

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

$$\frac{20}{\left(16 - \left(\frac{1}{3} - \frac{1}{4}\right)^{-1}\right)^2} = \frac{20}{16} = \frac{5}{4} = 1.25$$

$$1.25$$

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?

50 mph - 3

$$270$$

$$150$$

$$120$$

5 hours

7. Solve for x and y

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

$$x + y = 10$$

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

$$3+5 = 10$$

$$3(6) - 5y = -2$$

$$x = 6$$

$$y = 4$$

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?

$$7t = \$700$$

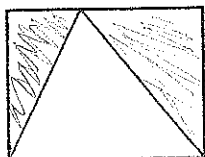
$$3.5 = \$700$$

$$1 = \$150$$

$$2.5 = 100$$

$$\$400$$

9. What is the area of the shaded region?



3 meters

square meters

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

$$\$200,000$$

$$- \$80,000$$

%

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4/10

1. Solve for x in the equation $\frac{3x}{k} = x$

$$\begin{array}{r} 3x + 12 = kx - k2 \\ -12 \quad -12 \\ \hline 3x = kx - k2 - 12 \end{array}$$

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

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

2. Multiply out and simplify. Check your answer.

$$\begin{aligned} & \star 1 - 2x + x^2 + x - 2x^2 + x^3 \\ & (1+x)(1-2x+x^2) \end{aligned}$$

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

WHY CAN'T I FACTOR?

3. Put over a common

denominator and simplify.

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

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

$$\frac{x+31}{15}$$

4. What is 25% of $\frac{4}{3}$ of 12?

\star

4

5. Calculate

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

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

← solve P first!

$$\frac{4}{12} - \frac{3}{12} = \frac{1}{12}$$

$$\begin{aligned} (16-12)^2 &= 16 \\ 4^2 &= 16 \end{aligned}$$

$$\frac{20}{189} \cdot \frac{5}{4}$$

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?

$$\begin{array}{r} 270 \\ -150 \\ \hline 120 \end{array}$$

5 2 hours

7. Solve for x and y

\star

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

$$x + y = 10$$

$$3x - 5(10-x) = -2$$

$$3x - 50 + 5x = -2$$

$$\begin{array}{r} 8x - 50 = -2 \\ +50 \quad +50 \\ \hline 8x = 48 \\ \frac{8x}{8} = \frac{48}{8} \end{array}$$

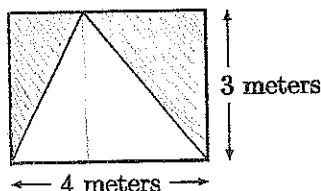
$$x = 6$$

$$y = 4$$

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?

\$ 400

9. What is the area of the shaded region?



square meters

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

$$\frac{80,000}{200,000} = \frac{8}{200} = \frac{4}{100}$$

60 96 %

No calculators

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1. Solve for x in the equation $3(x+4) = \frac{3(x+4)}{(x-2)}(x-2)$

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

$12 = 2x-6$

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

$k = \frac{3(x+4)}{(x-2)}$

$x =$

2. Multiply out and simplify. Check your answer.

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

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

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

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

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

3. Put over a common denominator and simplify.

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

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

$x+9$
 15

4. What is 25% of $\frac{4}{3}$ of 12?

$\frac{4}{3} \cdot \frac{12}{1} = \frac{48}{3} = 16$

$\frac{1}{4} \cdot \frac{16}{1} = \frac{16}{4} = 4$

4

5. Calculate

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

$\frac{20}{17^2} = \frac{20}{289}$

20 / 289

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?

$\frac{270}{50} = 5.4$

$\frac{120}{60} = 2$

$5.4 + 2 = 7.4$

5 hours

7. Solve for x and y

$3x - 5y = -2$

$3x + 13y = 30$

$x + y = 10$

$x = 6$

$y = 4$

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?

$\frac{7}{2} = 3.5$

$3.5 \times 200 = 700$

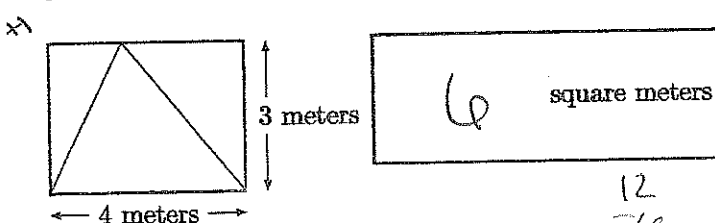
$3.5 \times 100 = 350$

$700 + 150 = 850$

$850 - 700 = 150$

\$ 4,550

9. What is the area of the shaded region?



$A = \frac{1}{2}bh$

$A = \frac{1}{2}(4)(3) = 6$

$\frac{12}{2} = 6$

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

$\frac{120,000}{200,000} = \frac{6}{10}$

60 %

Alvaro Marquez

boxes

5 / 10

No calculators

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1. Solve for x in the equation

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

$$x = \frac{2-10}{2}$$

2. Multiply out and simplify. Check your answer.

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

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

3. Put over a common denominator and simplify.

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

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

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

$$12 \times \frac{1}{3} = 4$$

$$4 \times 0.25 = 1$$

$$4$$

5. Calculate

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

$$\frac{16 - \frac{1}{2}}{520}$$

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?

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

$$150 + 60x = 270$$

$$60x = 120$$

$$x = 2$$

$$5$$

hours

7. Solve for x and y

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

$$x + y = 10$$

$$x = 6$$

$$y = 4$$

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?

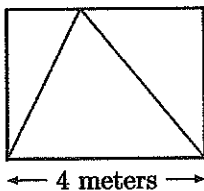
$$700$$

$$150$$

$$200 \times 3.5 = 700$$

$$\$1100$$

9. What is the area of the shaded region?



3 meters

$$12$$

square meters

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

$$\frac{120,000}{200,000}$$

$$0.6$$

$$60\%$$

$$58$$

%

to

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1. Solve for x in the equation

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

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

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

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

2. Multiply out and simplify. Check your answer.

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

$$-3 + x^3$$

3. Put over a common

denominator and simplify.

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

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

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

4. What is 25% of $\frac{4}{3}$ of 12?

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

$$16 \cdot 0.25 = 4$$

5. Calculate

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

$$\frac{20}{16 - (\frac{1}{3} - \frac{1}{4})^{-1}} = \frac{20}{16 - 12} = \frac{20}{4} = 5$$

$$\frac{5}{4} = 1.25$$

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?

$$270 = 150 + 60x$$

$$270 - 150 = 60x$$

$$120 = 60x$$

$$x = 2$$

$$2 + 3 = 5 \text{ hours}$$

7. Solve for x and y

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

$$x + y = 10$$

$$x = 10 - y$$

$$3(10-y) - 5y = -2$$

$$30 - 3y - 5y = -2$$

$$30 - 8y = -2$$

$$8y = 32$$

$$y = 4$$

$$x = 6$$

$$y = 4$$

$$3x - 5(4) = -2$$

$$3x - 20 = -2$$

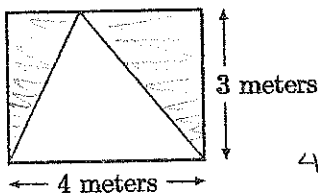
$$3x = 18$$

$$x = 6$$

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?

$$\$ 400$$

9. What is the area of the shaded region?



$$6 \text{ square meters}$$

$$4 \cdot 3 = 12 \text{ meters}$$

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

$$\frac{200,000 - 80,000}{200,000} = \frac{120,000}{200,000}$$

$$60 \%$$

$$\frac{120,000}{200,000} \times 100 = 60 \%$$

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1. Solve for x in the equation

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

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

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

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

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

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

2. Multiply out and simplify. Check your answer.

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

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

3. Put over a common

denominator and simplify.

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

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

4. What is 25% of $\frac{4}{3}$ of 12?

$$\frac{4}{3} \cdot \frac{1}{2} = \frac{4}{3} \cdot \frac{1}{2} = \frac{2}{3}$$

$$0.00444\ldots$$

5. Calculate

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

$$16 - 12 = 4^2 = 16$$

$$\frac{5}{4}$$

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?

$$50 + 50 + 50 = 150 \text{ miles}$$

$$270 - 150 = 120$$

$$60 + 60 = 120$$

$$2 \text{ hours}$$

7. Solve for x and y

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

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

$$3x - 20 = -2 + 20$$

$$3x = 18$$

$$x = 6$$

$$3(10 - y) - 5y = -2$$

$$30 - 3y - 5y = -2 - 30$$

$$-8y = -32$$

$$x = 6$$

$$y = 4$$

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?

$$200 \times 3.5 = 700$$

$$100 \times 2.5 = 250$$

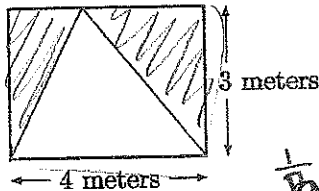
$$100 \times 1 = 100$$

$$100 \times 1 = 100$$

$$100 \times 1 = 100$$

$$250$$

9. What is the area of the shaded region?



$$6 \text{ square meters}$$

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

$$200,000 - 80,000 = 120,000$$

$$40 \%$$

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1. Solve for x in the equation $\frac{-2k}{3-k}$

$$\frac{3x-kx}{3-k} = \frac{-14}{3-k}$$

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

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

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

$$x = k+4$$

2. Multiply out and simplify. Check your answer.

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

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

3. Put over a common denominator and simplify.

$$\frac{30x+45}{15} - \frac{15x+30}{15} = \frac{15x+15}{15}$$

$$\frac{2x+3}{3} - \frac{3x+2}{5} = 1$$

$$\frac{2x+3}{3} - \frac{3x+2}{5} = 1$$

4. What is 25% of $\frac{4}{3}$ of 12?

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

$$16 \cdot \frac{1}{4} = 4$$

5. Calculate

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

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

$$\frac{20}{256 - \frac{1}{12}}$$

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?

$$(50)(3) = 150$$

$$270 - 150 = 120$$

$$60 \overline{)120} = 2$$

5 hours

7. Solve for x and y

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

$$5(5x - 7y = 10)$$

$$25x - 35y = 50$$

$$3x = 48$$

$$x = 16$$

$$6 + y = 10$$

$$y = 4$$

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?

$$7 \text{ tons} \times \$100 = \$700$$

$$3.5 \text{ tons} \times \$200 = \$700$$

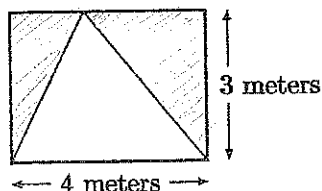
$$1 \text{ ton} \times \$150 = \$150$$

$$2.5 \text{ tons} \times \$100 = \$250$$

$$\$700 + \$700 + \$150 + \$250 = \$1800$$

$$\$1800 - \$700 = \$1100$$

9. What is the area of the shaded region?



6 square meters

$$\frac{1}{2} \times 4 \times 3 = 6$$

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

$$\frac{120,000}{200,000}$$

60 %

$$\frac{120}{200} = \frac{60}{100} = 60\%$$

6

Score

10

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1. Solve for x in the equation

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

$$3x+12 = -x-12$$

 $x =$

2. Multiply out and simplify. Check your answer.

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

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

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

3. Put over a common denominator and simplify.

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

4. What is 25% of $\frac{4}{3}$ of 12?

16

4

5. Calculate

$$\frac{4}{12} - \frac{3}{12} = \frac{1}{12}$$

$$\frac{1}{12} \times 16 = \frac{16}{12} = \frac{4}{3}$$

$$16 - 12 = 4$$

$$4^2 = 16$$

$$\frac{20}{16} = \frac{5}{4} = 1.25$$

1.25

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?

$$270 = 60x + 50 \times 3$$

150

$$\frac{120}{6} = 2 + 3$$

5

hours

7. Solve for x and y

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

$$3x - 5(10-x) = -2$$

$$3x - 50 + 5x = -2$$

$$8x = 48$$

$$x = 6$$

 $x = 6$ $y = 4$

$$6 + y = 10$$

$$y = 4$$

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?

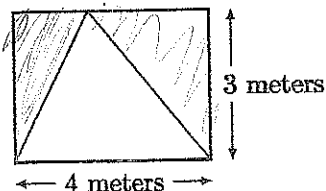
$$35 = 700 - 350$$

$$1 = 150 - 100$$

25

\$500

9. What is the area of the shaded region?



6

square meters

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

$$\frac{80}{200} = \frac{4}{10}$$

60

%

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$$\begin{array}{r} x^2 - 2x + 1 \\ x \overline{) x^3 - 2x^2 + x} \\ \underline{x^3 - 2x^2} \\ 0x^3 + 0x^2 + x \\ \underline{x^3 - 2x^2} \\ 0x^3 + 0x^2 + 0x + 1 \\ \underline{0x^3 + 0x^2 + 0x + 1} \\ 0 \end{array}$$

1. Solve for x in the equation

$$x(3-k) = -12-k2$$

$$\begin{aligned} 3(x+4) &= k(x-2) \\ 3x+12 &= kx-2k \\ 3x-kx &= -12-k2 \end{aligned}$$

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

2. Multiply out and simplify. Check your answer.

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

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

3. Put over a common

denominator and simplify.

$$\frac{10x+15}{15} = \frac{7x+6}{15}$$

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

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

4. What is 25% of $\frac{4}{3}$ of 12?

4

5. Calculate

$$\begin{aligned} (16-12)^2 \\ (4)^2 = 16 \end{aligned}$$

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

$$\frac{5}{4}$$

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?

$$\begin{aligned} 270 \\ -150 \\ \hline 120 \end{aligned}$$

5 hours

7. Solve for x and y

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

$$x + y = 10$$

$$x = 10 - y$$

$$3(10-y) - 5y = -2$$

$$30 - 3y - 5y = -2$$

$$30 - 8y = -2$$

$$-8y = -32$$

$$y = 4$$

$$x = 10 - (4)$$

$$x = 6$$

$$x = 13.5$$

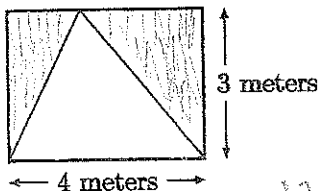
$$y = -3.5$$

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?

$$\begin{aligned} 700 + 150 + 250 \\ 100 + 400 \\ 1100 - 700 \end{aligned}$$

\$400

9. What is the area of the shaded region?



6 square meters

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

$$\begin{aligned} 200,000 \\ -80,000 \\ \hline 120,000 \end{aligned}$$

60 %

No calculators

provided on this page.

Scoring: A question is either 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

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

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

$$x = \frac{3}{2}$$

2. Multiply out and simplify. Check your answer.

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

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

3. Put over a common denominator and simplify.

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

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

4. What is 25% of $\frac{4}{3}$ of 12?

$$\frac{12}{1} \cdot \frac{4}{3} = \frac{48}{3}$$

$$\frac{48}{3} \cdot \frac{1}{4} = \frac{48}{12}$$

$$4$$

5. Calculate

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

$$\frac{20}{112}$$

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?

$$150$$

$$5 \text{ hours}$$

7. Solve for x and y

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

$$x + y = 10$$

$$x = -24$$

$$y = -14$$

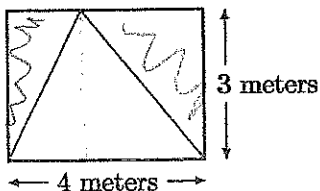
8. An entrepreneur bought 7 tons of apples for \$100 per ton. She sold half the apples at a price of \$200 per ton. She sold another ton for \$150. The remainder she sold at \$100 per ton. How much profit did she make?

$$\frac{1}{2} \cdot 700$$

$$2 \cdot 5 = 250$$

$$\$ 1100$$

9. What is the area of the shaded region?



$$6 \text{ square meters}$$

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

$$\frac{80}{200}$$

$$\frac{2}{5} = \frac{40}{100}$$

$$60 \%$$

No calculators

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If you score 8-10, congratulations! You are ready for Math 34A.

1. Solve for x in the equation

$$\begin{aligned} 3x+12 &= kx-k2 \\ -kx-12 &-kx-12 \\ 3x-kx &= -k2-12 \\ 3(x-4) &= k(x-2) \\ 3x+12 &= kx-k2 \\ -kx-12 &-kx-12 \\ 3x-kx &= \end{aligned}$$

$$\begin{aligned} 3(x+4) &= k(x-2) \\ 3x+12 &= kx-k2 \\ -3x-12 &-3x-12 \\ 1 &= \frac{k2-12}{3-k} \\ x &= \frac{k2-12}{3-k} = \frac{-10}{3} \\ &= \frac{2-12}{3} = \frac{-10}{3} \end{aligned}$$

2. Multiply out and simplify. Check your answer.

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

$$\begin{aligned} 1-2x+x^2+x-2x^2+x^3 \\ 1-x-x^2+x^3 \end{aligned}$$

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

3. Put over a common

$$\frac{10x+15}{15} - \frac{9x+6}{15} \text{ denominator and simplify.}$$

$$S. \frac{2x+3}{3} - \frac{3x+2}{5} = 3$$

$$\frac{x+9}{15} = \frac{x+3}{5}$$

4. What is 25% of $\frac{4}{3}$ of 12?

$$\frac{1}{3}$$

5. Calculate

$$\begin{aligned} \frac{1}{2} &= \frac{20}{(16 - (\frac{1}{3} - \frac{1}{4})^{-1})^2} \\ \frac{16}{1} &= (\frac{1}{2})^2 \cdot \frac{1}{2} \\ \frac{16}{1} &= \frac{1}{4} \cdot \frac{1}{2} \\ \frac{16}{1} &= \frac{1}{8} \end{aligned}$$

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?

$$\begin{aligned} 50 \times 3 \\ 150 \end{aligned}$$

$$\begin{aligned} 270 \\ -150 \\ \hline 120 \end{aligned}$$

$$4.5 \text{ hours}$$

7. Solve for x and y

$$\begin{aligned} 3x-5y &= -2 \\ x+y &= 10 \\ 3x-5y &= -2 \\ 3(6)-5 &= -2 \\ 18-5 &= -2 \\ 13 &= -2 \end{aligned}$$

$$x = 6$$

$$y = 4$$

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?

$$3.5 - \$200$$

$$1 - \$150$$

$$1000$$

$$1000$$

$$1000$$

$$1000$$

$$1000$$

$$1000$$

$$1000$$

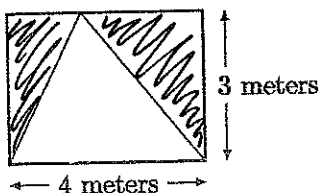
$$1000$$

$$1000$$

$$1000$$

$$1000$$

9. What is the area of the shaded region?



square meters

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

%

No calculators

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If you score 8-10, congratulations! You are ready for Math 34A.

1. Solve for x in the equation

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

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

$x =$

X

2. Multiply out and simplify. Check your answer.

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

3. Put over a common denominator and simplify.

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

$$\frac{x+21}{15}$$

X

4. What is 25% of $\frac{4}{3}$ of 12?

4

✓

5. Calculate

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

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?

5

hours

✓

7. Solve for x and y

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

$$x + y = 10$$

$x =$

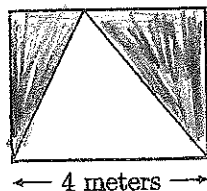
$y =$

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?

\$ 450

✓

9. What is the area of the shaded region?



3 meters

square meters

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

%

X

Erick C.

No calculators

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If you score 8-10, congratulations! You are ready for Math 34A.

1. Solve for x in the equation $3(x+4) = k(x-2)$ (X)

$3x+12 = kx - 2k$

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

$x+12 = k(x)$

$x = 2$

2. Multiply out and simplify. Check your answer. (X)

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

$-1x + x^2$

3. Put over a common denominator and simplify. (X)

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

$\frac{10x+20-9x-6}{15} = \frac{x+14}{15}$

4. What is 25% of $\frac{4}{3}$ of 12? (X)

$\frac{1}{4} \cdot \frac{4}{3} \cdot 12 = 4$

4

5. Calculate (X)

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

$\frac{20}{32} = \frac{5}{8}$

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? (✓)

50m 3 150
60m 2 120
270

5 hours

7. Solve for x and y (X)

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

$x = 1$
 $y = 9$

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? (X)

7t 100 700
3.5 200 700
3.5 350

\$ 350

9. What is the area of the shaded region? (✓)

3m 4m 3m

6 square meters

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

100% 200,000
100,000

60 %

Christopher Boling

Math 34A Winter 2021
Entrance Quiz

Put your final answers in the

Score

8 / 10

No calculators

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If you score 8-10, congratulations! You are ready for Math 34A.

1. Solve for x in the equation

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

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

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

$$x = -\frac{10}{3}$$

2. Multiply out and simplify. Check your answer.

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

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

3. Put over a common denominator and simplify.

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

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

4. What is 25% of $\frac{4}{3}$ of 12?

$$25\% \text{ of } \frac{4}{3} \cdot 12 = \frac{1}{4} \cdot \frac{4}{3} \cdot 12 = 4$$

$$4$$

5. Calculate

$$\left(\frac{1}{12}\right)^{-1} = 12$$

$$16 - 12 = 4$$

$$-4^2 = 16$$

$$\frac{20}{(16 - (\frac{1}{3} - \frac{1}{4})^{-1})^2} = \frac{20}{(16 - 12)^2} = \frac{20}{16} = \frac{5}{4}$$

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?

$$150 \text{ miles in first 3 hrs} - 120 \text{ miles left}$$

$$2 \text{ hrs}$$

$$5 \text{ hours}$$

7. Solve for x and y

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

$$3x + 3y = 30$$

$$-8y = -32$$

$$y = 4$$

$$x = 6$$

$$y = 4$$

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?

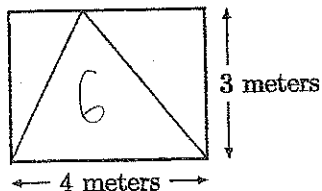
$$\$700 \text{ for a}$$

$$\$200 - 2.5 = 700 + 150$$

$$850 - 700 = 150$$

$$\$400$$

9. What is the area of the shaded region?



$$6 \text{ square meters}$$

$$\frac{1}{2}bh = \frac{1}{2}(4)(3)$$

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

$$20 \text{ } 10\%$$

$$40 \text{ } 20\%$$

$$60 \text{ } 30\%$$

$$80 \text{ } 40\%$$

$$60 \%$$

6 / 10

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If you score 8-10, congratulations! You are ready for Math 34A.

1. Solve for x in the equation

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

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

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

$$x =$$

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

2. Multiply out and simplify. Check your answer.

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

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

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

3. Put over a common denominator and simplify.

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

$$x + 2$$

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

4. What is 25% of $\frac{4}{3}$ of 12?

$$\frac{4}{3} \cdot \frac{12}{1} \cdot \frac{25}{100}$$

$$4$$

5. Calculate

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

$$\frac{5}{4}$$

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

$$16 - \frac{12}{1}$$

$$16 - 12 = 4$$

$$\frac{20}{4^2} = \frac{20}{16} = \frac{5}{4}$$

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?

$$\frac{270}{150} = \frac{9}{5}$$

$$5 \text{ hours}$$

7. Solve for x and y

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

$$x + y = 10$$

$$x + 10 = \frac{-2 + 5x}{-5}$$

$$x = -4, y = 14$$

$$x = 6$$

$$y = 4$$

$$-2 - 3x = 10 - x$$

$$-2 - 3x = 10 - x$$

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?

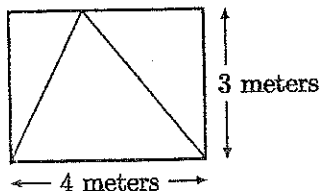
$$7 \cdot 100 = 700$$

$$2.5 \cdot 200 = 500$$

$$1 \cdot 150 = 150$$

$$\$ 466$$

9. What is the area of the shaded region?



$$6 \text{ square meters}$$

$$-3y + 30 = 5y - 2$$

$$32 = 8y$$

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

$$60 \%$$

5 / 10

No calculators

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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

$x =$

2. Multiply out and simplify. Check your answer.

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

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

3. Put over a common denominator and simplify.

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

$$\frac{-1x+13}{15}$$

4. What is 25% of $\frac{4}{3}$ of 12?

4

5. Calculate

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

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?

5

hours

7. Solve for x and y

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

$$x + y = 10$$

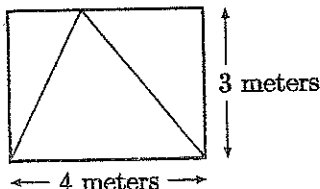
$x =$

$y =$

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?

\$ 400

9. What is the area of the shaded region?



12 square meters

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

60% %

No calculators

provided on this page.

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1. Solve for x in the equation

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

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

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

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

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

3. Put over a common

denominator and simplify.

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

$$x+9$$

2. Multiply out and simplify. Check your answer.

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

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

x

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

4. What is 25% of $\frac{4}{3}$ of 12?

$$16 \left(\frac{1}{4} \right) = 4$$

$$4$$

5. Calculate

$$\left(\frac{1}{3} - \frac{1}{4} \right) = \frac{4}{12} - \frac{3}{12} = \frac{1}{12}$$

$$\left(\frac{1}{12} \right)^{-1} = 12$$

$$16-12 = 4 \quad (4)^2 = 16$$

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?

$$150 \text{ miles} \rightarrow 3 \text{ hrs}$$

$$270 - 150 = 120 \text{ miles @ } 60$$

$$\frac{120}{60} = 2 \text{ hrs}$$

$$5 \text{ hours}$$

7. Solve for x and y

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

$$x+y = 10$$

$$x = -y+10$$

$$3(-y+10)-5y = -2$$

$$-3y+30-5y = -2$$

$$-8y+30 = -2$$

$$-8y = -32$$

$$y = 4$$

$$x+y = 10$$

$$x+4 = 10$$

$$x = 6$$

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?

$$1 \text{ ton} = \$100$$

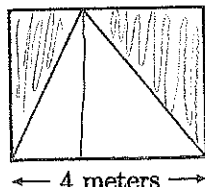
$$7 \text{ tons} = \$700$$

$$3.5 \text{ tons} \times 200 = \$700$$

$$2.5 \text{ tons} = \$100$$

$$\$350$$

9. What is the area of the shaded region?



$$A = \frac{1}{2}bh$$

$$12$$

$$A = \frac{1}{2}bh$$

$$A = \frac{1}{2}(4)(3) = 6$$

$$\frac{1}{2}(12)$$

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

$$\frac{80,000}{200,000}$$

$$\frac{8}{20} = \frac{2}{5}$$

$$\frac{1}{4} \div \frac{1}{100} = \frac{1}{4} \cdot \frac{100}{1}$$

$$\frac{2}{5} \cdot \frac{100}{1} = 40\%$$

$$60\%$$

No calculators

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If you score 8-10, congratulations! You are ready for Math 34A.

1. Solve for x in the equation

X

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

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

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

$$3x = k(x-2)$$

$$x = \frac{-2(k+6)}{(3-k)}$$

2. Multiply out and simplify. Check your answer.

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

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

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

✓

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

3. Put over a common

X

denominator and simplify.

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

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

4. What is 25% of $\frac{4}{3}$ of 12?

4

✓

5. Calculate

X

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

$$\frac{20}{17^2}$$

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?

5 hours

✓

7. Solve for x and y

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

$$x + y = 10$$

$$x = 6$$

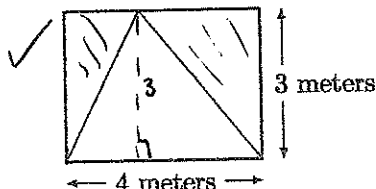
$$y = 4$$

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?

\$ 400

✓

9. What is the area of the shaded region?



6 square meters

$$\square = 12 \quad \Delta = \frac{1}{2}(4 \cdot 3) = 6$$

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

60 %

✓

10

No calculators

provided on this page.

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

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If you score 8-10, congratulations! You are ready for Math 34A.

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

1. Solve for x in the equation

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

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

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

$$x = \frac{12}{k-5}$$

$$5x - kx = -12$$

$$x(5 - k) = \frac{-12}{1}$$

3. Put over a common

denominator and simplify.

$$\frac{10x+15}{15} - \frac{12x+6}{15} = \frac{2x+3}{3} - \frac{3x+2}{5}$$

$$\frac{-2x+9}{15}$$

2. Multiply out and simplify. Check your answer.

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

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

4. What is 25% of $\frac{4}{3}$ of 12?

$$\frac{x}{12} = \frac{4}{3} \times 0.25$$

$$3x = \frac{48}{3} \quad x = 16 \quad 4.00$$

$$4$$

5. Calculate

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

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

$$16 - \left(\frac{1}{12}\right)^{-1}$$

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?

$$\begin{array}{r} 270 \\ 150 \text{ mi} \\ \hline 120 \text{ mi} \end{array}$$

$$2 \text{ hr} + 3 \text{ hr} = 5$$

$$5 \text{ hours}$$

7. Solve for x and y

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

$$x = 6$$

$$x + y = 10$$

$$y = 4$$

$$10 - x$$

$$3x - 50 + 5x = -2$$

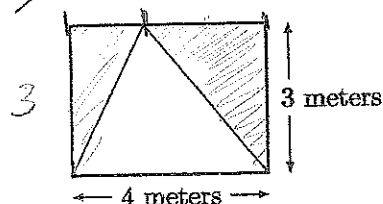
$$8x = 48 + 50$$

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?

$$\begin{array}{r} \text{Spent } 700 \\ \text{earned } 700 \\ +150 \\ \hline 1400 \end{array}$$

$$\$400$$

9. What is the area of the shaded region?



$$9.6 \text{ square meters}$$

$$\text{total} = 12 \text{ m}^2$$

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

$$\begin{array}{r} 80,000 \\ 80,000 \\ \hline 20,000 \\ 20,000 \cdot 4 \\ \hline 20 \end{array}$$

$$40 \%$$

$$60$$

Rilly Clark

Math 34A Winter 2021
Entrance Quiz

Put your final answers in the

Score

8 / 10

No calculators

provided on this page.

Scoring: A question is either 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

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

$$2x = -14$$

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

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

$$x = -8$$

2. Multiply out and simplify. Check your answer.

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

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

3. Put over a common

denominator and simplify.

$$\frac{10x + 15}{15} - \frac{(7x + 6)}{15}$$

$$\frac{5(2x + 3) - (7x + 6)}{5}$$

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

$$\frac{x + 11}{15}$$

4. What is 25% of $\frac{4}{3}$ of 12?

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

$$16 \cdot \frac{1}{4} = 4$$

$$4$$

5. Calculate

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

$$(\frac{1}{12}) = 12$$

$$16 - 12 = 4^2$$

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

$$\frac{5}{4}$$

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?

$$\begin{array}{r} 270 \\ -150 \\ \hline 120 \end{array} \quad \begin{array}{r} 60 \overline{)120} \\ 60 \overline{)120} \\ \hline 0 \end{array}$$

$$3 + 2 = 5$$

$$5 \text{ hours}$$

7. Solve for x and y

$$3(10 - y) - 5y = -2$$

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

$$30 - 3y - 5y = -2$$

$$2x + y = 10$$

$$x = 10 - y$$

$$3y = 32$$

$$y = 4$$

$$x = 6$$

$$x = 6$$

$$y = 4$$

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?

$$3.5 \cdot 200 = 700$$

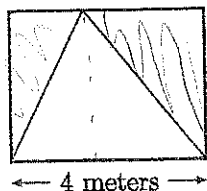
$$1 \cdot 150 = 150$$

$$2.5 \cdot 100 = 250$$

$$650$$

$$\$650$$

9. What is the area of the shaded region?



3 meters

$$6$$

square meters

$$12 - 6 = 6$$

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

$$\frac{12}{20} = \frac{6}{10}$$

$$60 \%$$

No calculators

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1. Solve for x in the equation

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

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

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

2. Multiply out and simplify. Check your answer.

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

$$-2x^2 + x$$

3. Put over a common denominator and simplify.

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

$$-9x + 1$$

4. What is 25% of $\frac{4}{3}$ of 12?

5. Calculate

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

$$\frac{20}{30}$$

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?

hours

7. Solve for x and y

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

$$x + y = 10$$

$$x =$$

$$y =$$

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?

$$3.5 \text{ sold } \$200$$

$$1 \text{ ton sold } \$150$$

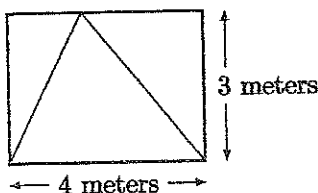
$$\text{remainder } 200$$

$$700$$

$$\$ -300$$

Profit after expenses

9. What is the area of the shaded region?



16 square meters

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

120

%

$$\frac{2}{3} \text{ of } L.W \quad \frac{600}{400}$$

No calculators

provided on this page.

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1. Solve for x in the equation

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

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

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

$$x = -\frac{k}{3} - 4$$

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

$$3 - k = -\frac{k}{3} - 4 - \frac{12}{3}$$

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

2. Multiply out and simplify. Check your answer.

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

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

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

3. Put over a common denominator and simplify.

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

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

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

4. What is 25% of $\frac{4}{3}$ of 12?

$$\frac{1}{4} \cdot \frac{4}{3} \cdot 12 = 4$$

$$4$$

5. Calculate

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

$$\frac{5/4 \cdot 20}{(16 - (\frac{1}{3} - \frac{1}{4})^{-1})^2}$$

$$20/289$$

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?

$$50 \cdot 3 = 150$$

$$\frac{270 - 150}{60} = 2$$

$$5 \text{ hours}$$

7. Solve for x and y

$$3(10 - y) - 5y = -2$$

$$30 - 3y - 5y = -2$$

$$30 - 8y = -2$$

$$32 = 8y$$

$$y = 4$$

$$3x - 5(4) = -2$$

$$3x - 20 = -2$$

$$3x = 18$$

$$x = 6$$

$$x = 6$$

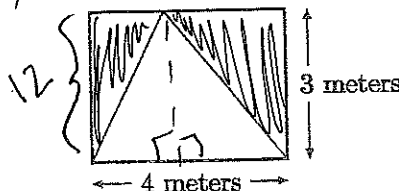
$$y = 4$$

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?

$$700 + 700 + 150 = 1550$$

$$400$$

9. What is the area of the shaded region?



square meters

$$6.5 \text{ m}$$

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

$$\frac{80}{200} = \frac{40}{100} = 40\%$$

$$60$$

%

No calculators

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Zoe Albornoz

1. Solve for x in the equation

ok, but simplify

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

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

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

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

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

2. Multiply out and simplify. Check your answer.

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

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

3. Put over a common denominator and simplify.

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

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

4. What is 25% of $\frac{4}{3}$ of 12?

$$\frac{4}{3} \times 12 = 16 \times \frac{1}{4} = 4$$

4

5. Calculate

$$\frac{\frac{4}{12} - \frac{3}{12}}{\frac{1}{12}} = 12$$

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

$$\frac{20}{16}$$

$$\frac{5}{4}$$

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?

$$\frac{270}{150} = 1.8 \text{ hrs} \rightarrow 2 \text{ hrs}$$

5 hours

7. Solve for x and y

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

$$x + y = 10 \rightarrow x = 10 - y$$

$$3(10 - y) - 5y = -2$$

$$30 - 3y - 5y = -2$$

$$-8y = -32$$

$$y = 4$$

$$x = 6$$

$$y = 4$$

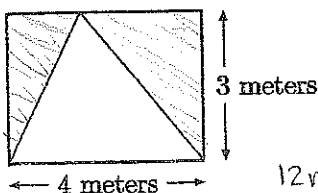
$$18 - 2(4) = 10$$

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?

$$\begin{aligned} & -\$700 \\ & 3.5 \text{ tons} \\ & 100 \times 100 = \$7000 \\ & 4.5 \rightarrow \$850 \quad 150 \\ & 2.5 \rightarrow \$250 \rightarrow \end{aligned}$$

\$ 400

9. What is the area of the shaded region?



6 square meters

$$12 \text{ m}^2 \text{ total} - 6 \text{ m}^2$$

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

$$\frac{120000}{200000} = \frac{12}{20} = \frac{6}{10} = 60\%$$

60 %

No calculators

Ela Schulz

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If you score 8-10, congratulations! You are ready for Math 34A.

1. Solve for
- x
- in the equation

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

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

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

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

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

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

2. Multiply out and simplify. Check your answer.

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

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

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

3. Put over a common denominator and simplify.

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

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

4. What is 25% of
- $\frac{4}{3}$
- of 12?

4

5. Calculate

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

$$\frac{5}{4}$$

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?

5 hours

7. Solve for
- x
- and
- y

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

$$x + y = 10$$

$$x = \frac{27}{2}$$

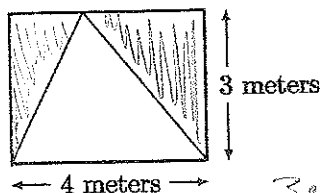
$$y = -\frac{7}{2}$$

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?

$$\begin{aligned} \frac{7}{2} \cdot 3.5 \cdot 200 &= 700 \\ 1 \cdot 150 &= 150 \\ 2.5 \cdot 100 &= 250 \end{aligned}$$

\$ 400

9. What is the area of the shaded region?



6 square meters

$$3 \cdot 4 = \frac{12}{2} = 6$$

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

60 %

10

No calculators

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If you score 8-10, congratulations! You are ready for Math 34A.

1. Solve for x in the equation

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

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

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

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

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

$$-kx - 12 = -kx - 12$$

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

2. Multiply out and simplify. Check your answer.

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

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

3. Put over a common

$$\frac{10x + 15}{15} \text{ denominator and simplify. } 15$$

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

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

4. What is 25% of $\frac{4}{3}$ of 12?

$$4 \cdot 4 \cdot 4 = 64$$

$$25\% \text{ of } 64 = 16$$

4

5. Calculate

$$\left(\frac{1}{16} - \frac{1}{12} \right)^{-1} = \frac{20}{16 - \left(\frac{1}{3} - \frac{1}{4} \right)^{-1}} = \frac{20}{16} = \frac{5}{4}$$

$$16 - 12 = 4 \cdot 4 = 16$$

$$\frac{5}{4}$$

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?

$$150 \text{ miles } 270 - 150 = 120$$

$$60 \cdot 2 = 120$$

$$2 + 3 = 5$$

5 hours

7. Solve for x and y

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

$$x + y = 10$$

$$x = \frac{10}{y}$$

$$y = \frac{10}{x}$$

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?

$$-700$$

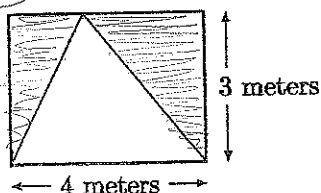
$$2 \cdot 3.5 = 700$$

$$+150 \rightarrow 400$$

$$+250$$

\$ 400

9. What is the area of the shaded region?



8 square meters

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

$$\frac{200}{200} - \frac{80}{200} = \frac{120}{200}$$

60 %

12 for box, maybe 2/3?

No calculators

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Marc Nunez

1. Solve for x in the equation

$$3x + 12 = kx - 20$$

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

$x =$

$$3x + 12 = kx - 20$$

$$3x - kx + 12 = -20$$

3. Put over a common denominator and simplify.

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

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

2. Multiply out and simplify. Check your answer.

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

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

4. What is 25% of $\frac{4}{3}$ of 12?

$$\frac{1}{3}$$

4

5. Calculate

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

$$\frac{4}{12} - \frac{3}{12} = \frac{1}{12}$$

$$\frac{20}{256 - \frac{1}{12}} = \frac{2400}{3071}$$

$$\frac{20}{256 - \frac{1}{12}} = \frac{2400}{3071}$$

$$\frac{20}{3071}$$

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?

$$50 + 50 + 50$$

$$150 - 270 = 120 = 2h$$

5

hours

7. Solve for x and y

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

$$x + y = 10$$

$$6 + y = 10$$

$$y = 4$$

$$y = 10 - x$$

$$3x - 5(10 - x) = -2$$

$$3x - 50 + 5x = -2$$

$$x = \frac{48}{8} = 6$$

$x = 6$

$y = 4$

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?

$$\$700$$

$$3.5 \cdot 200 = 700$$

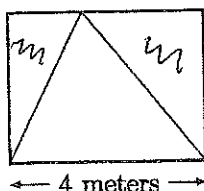
$$1 \cdot 150 = 150$$

$$2.5 \cdot 100 = 250$$

$$\$1100 - 700 = 400$$

\$ 400

9. What is the area of the shaded region?



3 meters

square meters

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

$$\frac{200,000 - 80,000}{200,000}$$

$$\frac{120,000}{200,000}$$

$$\frac{20}{8} = \frac{10}{4} = \frac{5}{2}$$

$$\frac{100}{40}$$

60

%

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Taylor Iden

1. Solve for x in the equation

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

$$x = \frac{k-14}{3}$$

2. Multiply out and simplify. Check your answer.

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

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

3. Put over a common denominator and simplify.

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

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

4. What is 25% of $\frac{4}{3}$ of 12?

$$\frac{4}{3} \text{ of } 12 = 16$$

$$25\% \cdot 16 = 4$$

$$4$$

5. Calculate

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

$$\frac{5}{4} = 1.25$$

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?

$$\frac{50}{150} \quad \frac{270}{150} = 1.8$$

$$\frac{60}{120}$$

$$5 \text{ hours}$$

7. Solve for x and y

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

$$x + y = 10$$

$$x = 10 - y$$

$$3(10-y) - 5y = -2$$

$$30 - 3y - 5y = -2$$

$$-8y = -32$$

$$y = 4$$

$$x + 4 = 16$$

$$x = 12$$

$$x = 6$$

$$y = 4$$

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?

$$7 \text{ tons} \times \$100 = \$700$$

$$3.5 \text{ tons} \times \$200 = \$700$$

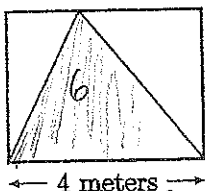
$$1 \text{ ton} \times \$150 = \$150$$

$$2.5 \text{ tons} \times \$100 = \$250$$

$$150 + 250 + 700 = 1100$$

$$1100 - 700 = 400$$

9. What is the area of the shaded region?



3 meters

$$6$$

square meters

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

$$120,000$$

$$\frac{3}{5} \times 100\% = 60\%$$

NAME: HARPER GIORVANO

Math 34A Winter 2021
Entrance Quiz

Put your final answers in the

Score

8/10

No calculators

provided on this page.

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1. Solve for x in the equation

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

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

2. Multiply out and simplify. Check your answer.

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

3. Put over a common denominator and simplify.

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

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

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

4. What is 25% of $\frac{4}{3}$ of 12?

$$\frac{4}{3} \left(\frac{12}{1} \right) (0.25) = 4$$

4

5. Calculate

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

125

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?

$$50x + 60x = 270$$

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

$$60x = 120$$

$$x = 2$$

$$2+3=5$$

 $x = \text{hrs}$

5 hours

7. Solve for x and y

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

$$x + y = 10$$

$$y = 10 - x$$

$$3x - 5(10 - x) = -2$$

$$3x - 50 + 5x = -2$$

$$8x = 48 \rightarrow x = 6$$

$$6 + y = 10$$

$$y = 4$$

$$x = 6$$

$$y = 4$$

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?

$$200(3.5) = 700$$

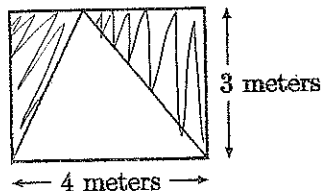
$$+ 150$$

$$100(2.5) \rightarrow + 250$$

$$1100 - 700 = 400$$

\$ 400

9. What is the area of the shaded region?



6 square meters

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

\$120,000

60%

60 %

$$(4 \cdot 3) - \left(\frac{1}{2}\right)(4 \cdot 3) = 12 - 6 = 6$$

Anyi Zhao

No calculators

provided on this page.

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

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

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

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

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

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

2. Multiply out and simplify. Check your answer.

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

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

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

3. Put over a common denominator and simplify.

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

$$= \frac{(2x+3)5}{15} - \frac{(3x+2)3}{15}$$

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

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

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

4. What is 25% of $\frac{4}{3}$ of 12?

$$12 \times \frac{4}{3} \times 25\%$$

$$= 16 \times 0.25 = 4$$

5. Calculate

$$\left(\frac{4}{12} - \frac{1}{12}\right)^{-1}$$

$$= \left(\frac{1}{12}\right)^{-1} = 12$$

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

$$16 -$$

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?

$$50 \times 3 + 60x = 270$$

$$60x = 270 - 150$$

$$x = \frac{120}{6}$$

$$x = 2$$

2 hours

7. Solve for x and y

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

$$x + y = 10$$

$$x = 6$$

$$y = 4$$

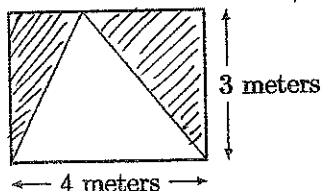
8. An entrepreneur bought 7 tons of apples for \$100 per ton. She sold half the apples at a price of \$200 per ton. She sold another ton for \$150. The remainder she sold at \$100 per ton. How much profit did she make?

$$7 \times 100 = 700$$

$$3.5 \times 200 + 150 + 100 \times (7 - 3.5 - 1)$$

$$400$$

9. What is the area of the shaded region?



6 square meters

$$\frac{4 \times 3}{2} = 6 m^2$$

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

$$\frac{200,000 - 80,000}{200,000}$$

$$= \frac{120,000}{200,000}$$

$$= \frac{12}{20} = \frac{3}{5}$$

60 %

No calculators

provided on this page.

Scoring: A question is either 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

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

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

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

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

3. Put over a common denominator and simplify.

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

2. Multiply out and simplify. Check your answer.

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

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

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

4. What is 25% of $\frac{4}{3}$ of 12?

$$3 \cdot 3 + 7 + 7$$

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

$$\frac{4}{12} \times 12 = 4$$

5. Calculate

$$\frac{20}{(16 - (\frac{1}{3} - \frac{1}{4})^{-1})^2} = \frac{5}{4} = 1.25$$

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?

$$50 \times 3 + 60 \times 2 = 150 \text{ miles}$$

$$\begin{array}{r} 270 \\ - 150 \\ \hline 120 \end{array}$$

$$\begin{array}{r} 60 \\ \times 2 \\ \hline 120 \end{array}$$

$$5.0 \text{ hours}$$

$$3 + 2 = 5$$

7. Solve for x and y

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

$$x + y = 10$$

$$x =$$

$$y =$$

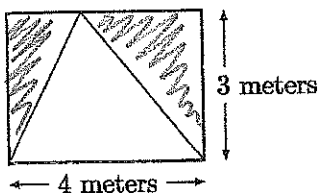
8. An entrepreneur bought 7 tons of apples for \$100 per ton. She sold half the apples at a price of \$200 per ton. She sold another ton for \$150. The remainder she sold at \$100 per ton. How much profit did she make?

$$\begin{array}{r} 7 \text{ tons} \quad \$100/\text{ton} \\ 3.5 \quad \$200/\text{ton} \\ 1 \text{ ton} \quad \$150 \\ \hline \end{array}$$

$$\$400$$

$$(600 + 100 + 100 + 50 + 50)$$

9. What is the area of the shaded region?



$$6 \text{ square meters}$$

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

$$60\%$$

No calculators

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If you score 4-7, seek help NOW: maybe enroll in CLAS?

If you score 8-10, congratulations! You are ready for Math 34A.

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

1. Solve for x in the equation

$$\begin{aligned} 3x + 12 &= kx - 2k \\ kx - 3x &= 12 + 2k \\ 3(x + 4) &= k(x - 2) \\ (k-3)x &= 12 + 2k \end{aligned}$$

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

2. Multiply out and simplify. Check your answer.

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

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

3. Put over a common denominator and simplify.

$$\frac{2x+3}{3} - \frac{3x+2}{5} = \frac{10x+10}{15} - \frac{9x+6}{15}$$

$$\frac{x+4}{15}$$

4. What is 25% of $\frac{4}{3}$ of 12?

4

5. Calculate

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

$$\frac{5}{4}$$

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?

5 hours

7. Solve for x and y

$$\begin{aligned} 3x - 5y &= -2 \\ x + y &= 10 \end{aligned}$$

$$\begin{aligned} 3x + 3y &= 30 \\ 8y &= 32 \end{aligned}$$

$$x = 6$$

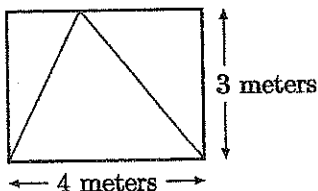
$$y = 4$$

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?

$$\begin{aligned} 700 & \quad 700 \\ 200 \times 3.5 &= 700 \\ + 2.5 \times 100 &= 250 \end{aligned}$$

\$ 400

9. What is the area of the shaded region?



6 square meters

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

$$\frac{12}{20} = \frac{3}{5}$$

60 %

Mason Montgomery

No calculators

provided on this page.

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If you score 8-10, congratulations! You are ready for Math 34A.

1. Solve for x in the equation

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

$x =$

2. Multiply out and simplify. Check your answer.

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

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

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

3. Put over a common denominator and simplify.

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

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

4. What is 25% of $\frac{4}{3}$ of 12?

$$\frac{12}{1} \cdot \frac{4}{3} = \frac{48}{3} = 16$$

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

5. Calculate

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

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?

$$270 - 150 = 120$$

$$120 \div 60 = 2$$

5 hours

7. Solve for x and y

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

$$x + y = 10$$

$$x = 10 - y$$

$$3(10 - y) - 5y = -2$$

$$30 - 3y - 5y = -2$$

$$-8y = -32$$

$$y = 4$$

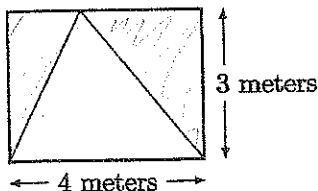
8. An entrepreneur bought 7 tons of apples for \$100 per ton. She sold half the apples at a price of \$200 per ton. She sold another ton for \$150. The remainder she sold at \$100 per ton. How much profit did she make?

$$700 \cdot 1.5 = 1050$$

$$700 \cdot 1.50 = 1050$$

\$ 400

9. What is the area of the shaded region?



6

square meters

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

$$\frac{120}{200} = \frac{6}{10}$$

60% %

No calculators

provided on this page.

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If you score 8-10, congratulations! You are ready for Math 34A.

1. Solve for x in the equation

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

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

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

$$x(3-k) = -14$$

$$x = -\frac{14}{(3-k)}$$

2. Multiply out and simplify. Check your answer.

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

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

3. Put over a common denominator and simplify.

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

$$\frac{(x+)(x+)}{15}$$

4. What is 25% of $\frac{4}{3}$ of 12?

$$\frac{36}{3} = 12 \quad \frac{4 \times 12}{3} = 16$$

$$3$$

5. Calculate

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

$$10 - 7 = \frac{3}{5} \times \frac{2}{5}$$

$$10 \cdot \frac{2}{5} = \frac{3}{5} \times 17$$

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?

$$60 \overline{) 270} \\ \underline{180} \\ 90 \\ \underline{90} \\ 0$$

$$6.67 \text{ hours}$$

7. Solve for x and y

$$3x = 5y - 2 \quad 3x - 5y = -2 \quad 5y = 3x + 2$$

$$x = 10 - y \quad x + y = 10 \quad y = 10 - x$$

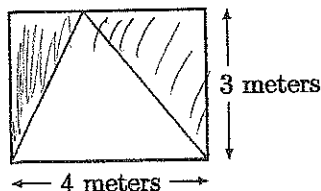
$$\frac{5}{3}y - 2 = 10 - y \quad \frac{5}{3}y + y = 12 \quad \frac{12}{1.67} = 7.2$$

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?

$$700 \quad 300 \quad 300 \\ 150 \quad 150 \\ 100 + 300 = 400 \\ \underline{750} \\ 150$$

$$\$ 50$$

9. What is the area of the shaded region?



$$6 \text{ square meters}$$

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

$$\frac{80,000}{200,000}$$

$$\frac{8}{20} = \frac{40}{100}$$

$$= 40\% \text{ tax} \quad 100 - 40 = 60$$

$$60 \%$$

No calculators

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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

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

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

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

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

2. Multiply out and simplify. Check your answer.

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

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

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

3. Put over a common denominator and simplify.

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

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

$$(10x+15) - (9x+18)$$

4. What is 25% of $\frac{4}{3}$ of 12?

16

4

5. Calculate

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

1.25

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
270
120

5 hours

7. Solve for x and y

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

$$x + y = 10$$

$$3(x) - 5y = -2$$

$$x + y = 10$$

$$x = 10 - y$$

$$y = \frac{-22}{-8}$$

$$x = 10 - y$$

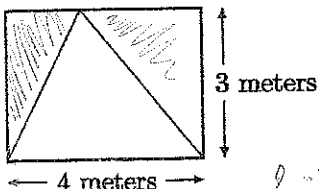
$$3(10 - y) - 5(10 - y) = -2$$

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 - 700
1 - 150
2.5 - 100

\$ 400

9. What is the area of the shaded region?



2.07 square meters

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

200000

60%

No calculators

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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

$$\begin{aligned} 3x + 12 &= xk - 2k \\ -x &-12 - xk \\ 3x - xk &= -12 - 2k \\ x(3 - k) &= -12 - 2k \end{aligned}$$

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

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

2. Multiply out and simplify. Check your answer.

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

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

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

3. Put over a common

denominator and simplify.

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

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

4. What is 25% of $\frac{4}{3}$ of 12?

4

5. Calculate

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

$$5/4 = 1.25$$

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

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?

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

$$150 + 60x = 270$$

$$60x = 120$$

$$x = 2$$

5 hours

$$3 + 2 = 5$$

7. Solve for x and y

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

$$3(x + y = 10)$$

$$-(3x + 3y = 30)$$

$$-8y = -32$$

$$y = 4$$

$$x = 6$$

$$y = 4$$

$$x + y = 10$$

$$x = 6$$

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?

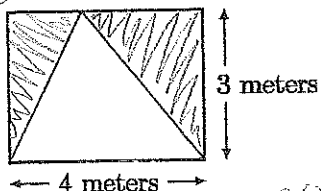
$$1 \text{ ton} = \$150$$

$$3.5 \text{ tons} = \$700$$

$$2.5 \text{ tons} = \$250$$

\$ 400

9. What is the area of the shaded region?



5 square meters

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

$$\frac{8}{20} = \frac{4}{10} = \frac{2}{5} \cdot 100 = 20\%$$

40 %

No calculators

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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

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

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

$x =$

2. Multiply out and simplify. Check your answer.

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

3. Put over a common denominator and simplify.

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

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

4. What is 25% of $\frac{4}{3}$ of 12?

$$\frac{12}{1} \times \frac{4}{3} = \frac{48}{3} \times \frac{1}{4} = \frac{18}{1} = 18$$

4

5. Calculate

$$\frac{20}{16} \cdot \frac{5}{4} = \frac{20 \cdot 5}{16 \cdot 4} = \frac{100}{64} = \frac{25}{16}$$

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

$\frac{5}{4}$

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?

5 hours

7. Solve for x and y

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

$$x + y = 10$$

$$x = 10 - y$$

$$3(10-y) - 5y = -2$$

$$30 - 3y - 5y = -2$$

$$-8y = -32 \quad y = 4$$

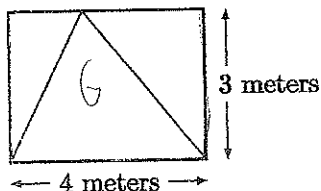
$x = 6$

$y = 4$

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?

\$ 400

9. What is the area of the shaded region?



6 square meters

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

60 %

Math 34A Winter 2021
Entrance Quiz

Put your final answers in the

Score

10

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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

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

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

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

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

2. Multiply out and simplify. Check your answer.

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

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

3. Put over a common denominator and simplify.

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

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

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

4. What is 25% of $\frac{4}{3}$ of 12?

5. Calculate

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

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?

$$\begin{array}{r} 50 \\ \times 3 \\ \hline 150 \end{array}$$

$$\begin{array}{r} 150 + 60x = 270 \\ -150 \quad -150 \\ \hline 60x = 120 \\ 60 \quad 60 \\ \hline x = 2 \end{array}$$

5 hours

7. Solve for x and y

$$\begin{array}{r} 3x - 5y = -2 + 5y \\ + 5y \\ \hline 3x - 5y = -2 \end{array}$$

$$\begin{array}{r} x + y = 10 \\ -y \\ \hline x = 10 \end{array}$$

$$x = 10 - y$$

$$\begin{array}{r} 3(10-y) - 5y = -2 \\ 30 - 3y - 5y = -2 \\ 30 - 8y = -2 \end{array}$$

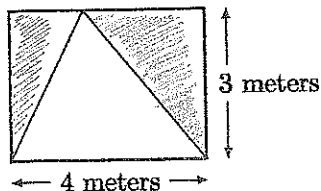
8. An entrepreneur bought 7 tons of apples for \$100 per ton. She sold half the apples at a price of \$200 per ton. She sold another ton for \$150. The remainder she sold at \$100 per ton. How much profit did she make?

$$7 \times 100 = 700$$

$$\frac{7}{2} = 3.5 \times 200 = 700$$

\$ 350

9. What is the area of the shaded region?



square meters

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

200,000

%

No calculators

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If you score 8-10, congratulations! You are ready for Math 34A.

1. Solve for x in the equation

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

$$x = 3k$$

$$3x + 12 = kx - k2$$

3. Put over a common denominator and simplify.

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

$$\frac{x+1}{3}$$

2. Multiply out and simplify. Check your answer.

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

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

4. What is 25% of $\frac{4}{3}$ of 12?

$$4$$

5. Calculate

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

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?

50 mph for 3 hrs

60 mph →

270

6 hours

7. Solve for x and y

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

$$x + y = 10$$

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

$$x + y = 10$$

$$x = 6$$

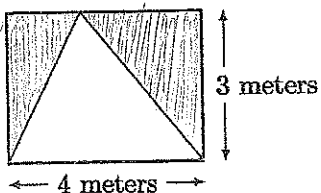
$$y = 4$$

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?

\$100 per ton

\$ 400

9. What is the area of the shaded region?



12 square meters

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

$$\begin{array}{r} 200,000 \\ - 80,000 \\ \hline 120,000 \\ \hline 200,000 \end{array}$$

60 %

No calculators

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If you score 8-10, congratulations! You are ready for Math 34A.

1. Solve for x in the equation

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

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

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

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

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

2. Multiply out and simplify. Check your answer.

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

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

3. Put over a common

denominator and simplify.

$$\frac{(2x + 3)(3x + 2)}{(3)(5)} \cdot \frac{3}{3}$$

$$\frac{x + 21}{15}$$

4. What is 25% of $\frac{4}{3}$ of 12?

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

$$\frac{1}{4} \cdot 16 = 4$$

4

5. Calculate

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

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?

$$3 \cdot 50 = 150$$

$$270 - 150 = 120$$

$$120 \div 60 = 2$$

5 hours

7. Solve for x and y

$$x + y = 10$$

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

$$x + y = 10$$

$$x = 6$$

$$x = 6$$

$$y = 4$$

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?

$$3.5 \text{ tons} = 700$$

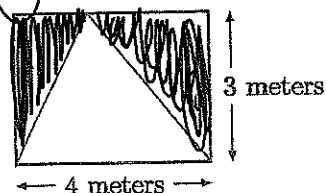
$$1 \text{ ton} = 150$$

$$2.5 \text{ tons} = 250$$

$$\text{total} = 1100 - 700 = 400$$

400

9. What is the area of the shaded region?



$$6 \text{ square meters}$$

$$\text{area of } D = \frac{b \cdot h}{2}$$

$$\text{shaded} = 6 \text{ m}^2$$

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

$$200 - 80 = 120$$

$$200(x) = 120$$

$$x = \frac{120}{200}$$

$$x = 60\%$$

%

$$\text{total area} = 12 \text{ m}^2$$

$$\text{area of } D = 6 \text{ m}^2$$

No calculators

provided on this page.

Scoring: A question is either 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: may be enroll in CLAS?

If you score 8-10, congratulations! You are ready for Math 34A.

	1	-2x	x ²
1		-2x	x ²
x	x	-2x	x ³

1. Solve for x in the equation

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

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

$x =$

2. Multiply out and simplify. Check your answer.

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

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

3. Put over a common denominator and simplify.

$$\frac{2x+3}{3 \cdot 5} - \frac{3x+2}{5 \cdot 3} = \frac{10x+15}{15} - \frac{9x+6}{15} = \frac{x+9}{15}$$

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

4. What is 25% of $\frac{4}{3}$ of 12?

$$\frac{4}{3}$$

4

5. Calculate

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

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?

$$\begin{aligned} 270 \\ 50 \cdot 3 &= 150 \\ \hline 120 \\ 2 \text{ at } 60 \\ 3 \cdot 2 &= 6 \end{aligned}$$

5 hours

7. Solve for x and y

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

$$x + y = 10$$

$x =$

$y =$

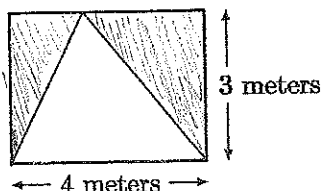
8. An entrepreneur bought 7 tons of apples for \$100 per ton. She sold half the apples at a price of \$200 per ton. She sold another ton for \$150. The remainder she sold at \$100 per ton. How much profit did she make?

$$\begin{aligned} 1100 \\ - 700 \\ \hline 400 \end{aligned}$$

\$ 400

$$\begin{aligned} 150 \\ 1100 \\ 600 \\ \hline 850 \\ 250 \\ \hline 1100 \end{aligned}$$

9. What is the area of the shaded region?



square meters

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

$$\frac{120,000}{200,000}$$

%

No calculators

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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

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

$$\frac{3x+12}{3} = \frac{kx-2}{1}$$

$$x+4 = kx-2$$

$$x = 4$$

$$x = 4$$

2. Multiply out and simplify. Check your answer.

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

$$1+x^3$$

3. Put over a common denominator and simplify.

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

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

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

4. What is 25% of $\frac{4}{3}$ of 12?

$$4$$

5. Calculate

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

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?

$$\begin{array}{r} 270 \\ -150 \\ \hline 120 \end{array}$$

$$5 \text{ hours}$$

7. Solve for x and y

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

$$x + y = 10$$

$$x =$$

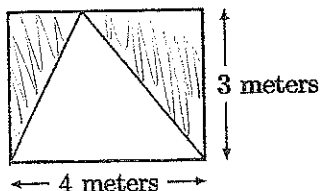
$$y =$$

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?

$$3.5 \quad \$700$$

$$\$250$$

9. What is the area of the shaded region?



square meters

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

$$40 \%$$

boxes

4 / 10

No calculators

provided on this page.

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If you score 4-7, seek help **NOW**: maybe enroll in CLAS?

If you score 8-10, congratulations! You are ready for Math 34A. $\frac{15}{k} + 2 = x^2$

1. Solve for x in the equation $\frac{3x+12}{k} = (x-2)$

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

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

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

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

$$x = \frac{15}{k} + 2$$

2. Multiply out and simplify. Check your answer.

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

3. Put over a common denominator and simplify.

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

$$1x+9$$

4. What is 25% of $\frac{4}{3}$ of 12?

$$25\% \text{ of } 16$$

4

5. Calculate

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

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?

$$50 \times 3 = 150 \text{ mi.}$$

$$\begin{array}{r} 270 \\ - 150 \\ \hline 120 \end{array}$$

5 hours

7. Solve for x and y

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

$$x + y = 10$$

$$x =$$

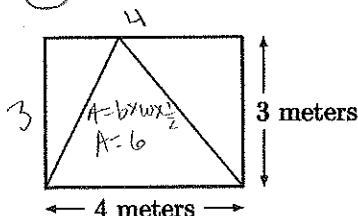
$$y =$$

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?

$$\begin{array}{r} 700 \\ 4.5 \quad 150 \\ 7 \quad 1100 \end{array}$$

\$ 400

9. What is the area of the shaded region?



6 square meters

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

70 %

boxes

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If you score 8-10, congratulations! You are ready for Math 34A.

Mustafa Saeed

1. Solve for x in the equation

$$x = \frac{kx - k2 + 12}{3}$$

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

$$3x + 12 = kx - k2$$

$$x = \frac{kx - k2 + 4}{3}$$

2. Multiply out and simplify. Check your answer.

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

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

3. Put over a common denominator and simplify.

$$\frac{10x+15}{15} - \frac{2x+3}{3} + \frac{3x+2}{5} = \frac{10x+15}{15} - \frac{10x+15}{15} + \frac{9x+6}{15} = \frac{9x+6}{15}$$

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

4. What is 25% of $\frac{4}{3}$ of 12?

$$\frac{12}{1} \times \frac{4}{3} = \frac{48}{3} = 16$$

$$4$$

5. Calculate

$$\frac{4}{12} - \frac{3}{12} = \frac{1}{12}$$

$$\left(\frac{1}{12}\right)^{-1} = 12$$

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

$$1 + 1 = 2$$

$$2 \times 0.625 = 1.25$$

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

$$1.25$$

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?

$$150 \text{ miles} = 3 \text{ hr}$$

$$120 \text{ miles} = 2 \text{ hr}$$

$$5 \text{ hours}$$

7. Solve for x and y

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

$$x + y = 10$$

$$x = 10 - y$$

$$x = 6$$

$$y = 4$$

$$3(10-y) - 5y = -2$$

$$30 - 3y - 5y = -2$$

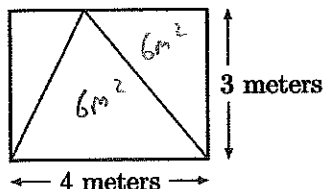
$$-8y = -32 \implies y = 4$$

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?

$$\begin{aligned} & -700 \text{ (cost)} \\ & +700 \text{ (revenue)} \\ & +150 \text{ (revenue)} \\ & +250 \text{ (revenue)} \\ & \hline & 400 \text{ (profit)} \end{aligned}$$

$$\$400$$

9. What is the area of the shaded region?



$$6 \text{ square meters}$$

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

$$\frac{80}{200} = 0.4$$

$$200 - 80 = 120$$

$$\frac{120}{200} = 0.6$$

$$60 \%$$

boxes

9/10

No calculators

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If you score 4-7, seek help NOW: maybe enroll in CLAS?

If you score 8-10, congratulations! You are ready for Math 34A.

Sizhe Ma

1. Solve for x in the equation

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

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

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

2. Multiply out and simplify. Check your answer.

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

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

3. Put over a common denominator and simplify.

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

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

$$10x+15 - 9x-6$$

4. What is 25% of $\frac{4}{3}$ of 12?

$$12 \cdot \frac{4}{3}$$

4

5. Calculate

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

$$\frac{20}{16}$$

$$\frac{5}{4}$$

5/4

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?

$$\frac{150}{2} = 75$$

5

hours

7. Solve for x and y

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

$$x + y = 10$$

$$x = 6$$

$$y = 4$$

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?

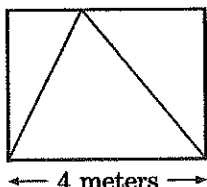
$$-700$$

$$3.5 \cdot 200 = 700$$

$$+150 + 100 \cdot 2.5 = 250 + 150$$

\$ 400

9. What is the area of the shaded region?



3 meters

6 square meters

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

$$\frac{120}{200}$$

$$\frac{12}{20} \times 5$$

$$200,000 \cdot 0.4$$

$$80,000 \checkmark$$

60 %

Put your final answers in the

boxes

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If you score 8-10, congratulations! You are ready for Math 34A.

1. Solve for x in the equation

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

$$x =$$

2. Multiply out and simplify. Check your answer.

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

3. Put over a common denominator and simplify.

$$\frac{2x+3}{3x+2} - \frac{x+9}{15}$$

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

5. Calculate

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

$$\frac{16}{10} = \frac{8}{5}$$

$$\frac{5}{4} = 1.25$$

7. Solve for x and y

$$\begin{aligned} 3x - 5y &= -2 \\ x + y &= 10 \end{aligned}$$

$$x = 6$$

$$y = 4$$

$$y = 11$$

$$6 + y = 10$$

$$y = x$$

$$6x = 48$$

$$5x + 5y = 50$$

$$5x - 5y = -2$$

$$10x = -48$$

$$x = -4.8$$

$$y = 14.8$$

$$y = 11$$

$$6 + y = 10$$

$$y = x$$

$$6x = 48$$

$$5x + 5y = 50$$

$$5x - 5y = -2$$

$$10x = -48$$

$$x = -4.8$$

$$y = 14.8$$

$$y = 11$$

$$6 + y = 10$$

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$$10x = -48$$

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$$y = 14.8$$

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$$10x = -48$$

$$x = -4.8$$

$$y = 14.8$$

$$y = 11$$

$$6 + y = 10$$

$$y = x$$

$$6x = 48$$

$$5x + 5y = 50$$

$$5x - 5y = -2$$

$$10x = -48$$

$$x = -4.8$$

$$y = 14.8$$

$$y = 11$$

$$6 + y = 10$$

$$y = x$$

$$6x = 48$$

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$$5x - 5y = -2$$

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$$10x = -48$$

$$x = -4.8$$

$$y = 14.8$$

$$y = 11$$

$$6 + y = 10$$

$$y = x$$

$$6x = 48$$

$$5x + 5y = 50$$

$$5x - 5y = -2$$

$$10x = -48$$

$$x = -4.8$$

$$y = 14.8$$

$$y = 11$$

$$6 + y = 10$$

$$y = x$$

$$6x = 48$$

$$5x + 5y = 50$$

$$5x - 5y = -2$$

$$10x = -48$$

$$x = -4.8$$

$$y = 14.8$$

$$y = 11$$

$$6 + y = 10$$

$$y = x$$

$$6x = 48$$

$$5x + 5y = 50$$

$$5x - 5y = -2$$

$$10x = -48$$

$$x = -4.8$$

$$y = 14.8$$

$$y = 11$$

$$6 + y = 10$$

$$y = x$$

$$6x = 48$$

$$5x + 5y = 50$$

$$5x - 5y = -2$$

$$10x = -48$$

$$x = -4.8$$

$$y = 14.8$$

$$y = 11$$

$$6 + y = 10$$

$$y = x$$

$$6x = 48$$

$$5x + 5y = 50$$

$$5x - 5y = -2$$

$$10x = -48$$

$$x = -4.8$$

$$y = 14.8$$

$$y = 11$$

$$6 + y = 10$$

$$y = x$$

$$6x = 48$$

$$5x + 5y = 50$$

$$5x - 5y = -2$$

$$10x = -48$$

$$x = -4.8$$

$$y = 14.8$$

$$y = 11$$

$$6 + y = 10$$

$$y = x$$

$$6x = 48$$

$$5x + 5y = 50$$

$$5x - 5y = -2$$

$$10x = -48$$

$$x = -4.8$$

$$y = 14.8$$

$$y = 11$$

$$6 + y = 10$$

$$y = x$$

$$6x = 48$$

$$5x + 5y = 50$$

$$5x - 5y = -2$$

$$10x = -48$$

$$x = -4.8$$

$$y = 14.8$$

$$y = 11$$

$$6 + y = 10$$

$$y = x$$

$$6x = 48$$

$$5x + 5y = 50$$

$$5x - 5y = -2$$

$$10x = -48$$

$$x = -4.8$$

$$y = 14.8$$

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$$5x + 5y = 50$$

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$$y = 14.8$$

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$$6 + y = 10$$

$$y = x$$

$$6x = 48$$

$$5x + 5y = 50$$

$$5x - 5y = -2$$

$$10x = -48$$

$$x = -4.8$$

$$y = 14.8$$

$$y = 11$$

$$6 + y = 10$$

$$y = x$$

$$6x = 48$$

$$5x + 5y = 50$$

$$5x - 5y = -2$$

$$10x = -48$$

$$x = -4.8$$

$$y = 14.8$$

$$y = 11$$

Put your final answers in the

Entrance Quiz

Math 34A Winter 2021

No calculators

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Scoring: A question is either 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.

Score

5 / 10

Leo Sahr

1) Solve for x in the equation

$$x = \frac{kx - 2k - 4}{3}$$

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

3. Put over a common

denominator and sim-

plify.

$$-x - 1$$

$$\frac{1}{5} \cdot \frac{2x + 3}{3} - \frac{3}{5} \cdot \frac{3x + 2}{1}$$

5. Calculate

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



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?

5 hours

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?

\$400

7. Solve for x and y

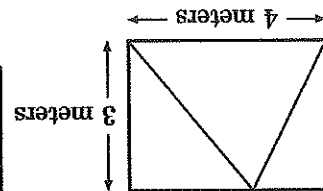
$$3x - 5y = -2$$

$$x + y = 10$$

$$x = \frac{5y - 2}{3}$$

$$y = 10 - x$$

square meters



9. What is the area of the shaded region?

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

60 %

weir Magana

Math 34A Winter 2021
Entrance Quiz

Put your final answers in the

boxes

Score

6 / 10

No calculators

provided on this page.

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If you score 8-10, congratulations! You are ready for Math 34A.

1. Solve for x in the equation

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

$x =$

2. Multiply out and simplify. Check your answer.

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

3. Put over a common denominator and simplify.

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

4. What is 25% of $\frac{4}{3}$ of 12?

5. Calculate

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

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?

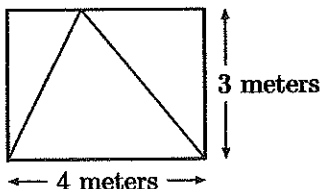
7. Solve for x and y

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

$$x + y = 10$$

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?

9. What is the area of the shaded region?



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

boxes

Score

4 / 10

No calculators

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If you score 8-10, congratulations! You are ready for Math 34A.

	1	-2x	x ²
1	1	-2x	x ²
x	x	-2x ²	x ³

$$-2 + 1 = -1$$

1. Solve for x in the equation

$$3(0) + 4 = k(0 - 2)$$

$$0 + 4 = 0 - 2k$$

$$4 = -2k = -2$$

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

$$x = -6/5$$

2. Multiply out and simplify. Check your answer.

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

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

3. Put over a common denominator and simplify.

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

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

$$\frac{10x^2-195x+90}{15}$$

$$-4x^2 - 13x + 4$$

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

5. Calculate

$$\frac{1}{3} \times 4 = \frac{4}{12} - \frac{3}{12} = \frac{1}{12}$$

$$\frac{1}{4} \times 3 = \frac{3}{12} \quad 16 - 12 = 4$$

$$\frac{20}{(16 - (\frac{1}{3} - \frac{1}{4})^{-1})^2} \quad \frac{20}{16} = \frac{5}{4}$$

$$\frac{5}{4}$$

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?

$$\frac{120}{60} \Rightarrow x = 2$$

$$5 \text{ hours}$$

$$150$$

$$(50 \times 3) + (60 \times 2) = 270$$

$$\frac{270}{120}$$

7. Solve for x and y

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

$$x + y = 10$$

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

$$-x + y = 10$$

$$2x - 4y = 8$$

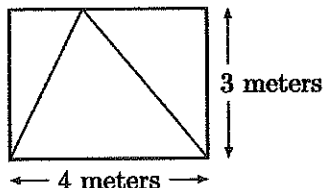
$$x =$$

$$y =$$

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?

\$

9. What is the area of the shaded region?



$$12 \text{ square meters}$$

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

$$\frac{200,000 - 80,000}{200,000}$$

$$60\%$$

No calculators

provided on this page.

Scoring: A question is either 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

$$3x + 12 = kx - k_2$$

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

$x =$

2. Multiply out and simplify. Check your answer. $1 - 2x + x^2$

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

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

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

3. Put over a common

denominator and simplify.

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

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

4. What is 25% of $\frac{4}{3}$ of 12?

$$\frac{1}{4} \text{ of } \frac{4}{3} \text{ of } 12$$

4

5. Calculate

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

$$16^2 + (\frac{1}{3} - \frac{1}{4})^2$$

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?

$$150 + 60x = 270$$

$$60x = 120$$

5 hours

7. Solve for x and y

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

$$x + y = 10$$

$$x = 10 - y$$

$$3(10 - y) - 5y = -2$$

$$30 - 3y - 5y = -2$$

$$x = 6$$

$$y = 4$$

$$-8y = -32$$

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?

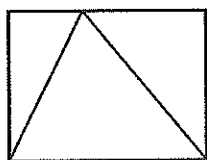
$$\$700 = \text{Total cost}$$

$$3.5 \times 200 =$$

$$3.5 - 1 = 2.5$$

\$ 400

9. What is the area of the shaded region?



3 meters

6 square meters

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

$$\frac{200,000 - 80,000}{200,000}$$

$$120,000$$

$$200,000 \overline{) 120,000.0}$$

60 %

boxes

No calculators

Score

10/10

provided on this page.

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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

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

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

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

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

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

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

2. Multiply out and simplify. Check your answer.

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

$$\begin{array}{r} 1 - 2x + x^2 \\ \times 1 + x \\ \hline 1 - 2x + x^2 \\ 1 - 2x + x^2 \\ \hline 1 - x^2 - x + 1 \end{array}$$

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

3. Put over a common

denominator and simplify.

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

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

4. What is 25% of $\frac{4}{3}$ of 12?

$$\frac{1}{4} \cdot \frac{4}{3} \cdot 12 = 4$$

4

5. Calculate

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

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

$$\frac{5}{4}$$

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?

$$50 \cdot 3 = 150$$

$$\frac{270}{2} = 60$$

5 hours

7. Solve for x and y

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

$$5x + 5y = 30$$

$$8x = 48$$

$$x = 6$$

$$y = 4$$

$$x = 6$$

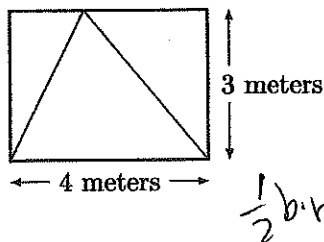
$$y = 4$$

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?

$$150 + 2.5 \cdot 100 = 400$$

$$400$$

9. What is the area of the shaded region?



6 square meters

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

$$\frac{120}{200} = \frac{60}{100}$$

60 %

boxes

Score

3 / 10

No calculators

provided on this page.

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If you score 8-10, congratulations! You are ready for Math 34A.

1. Solve for x in the equation

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

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

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

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

$$x = \frac{kx - 2k - 12}{3} - 4$$

2. Multiply out and simplify. Check your answer.

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

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

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

3. Put over a common denominator and simplify.

$$\frac{2x+3}{3} + \frac{-3x+2}{5} = \frac{x+6}{15}$$

$$\frac{x+6}{15}$$

4. What is 25% of $\frac{4}{3}$ of 12?

$$\frac{1}{3} \times 12 = \frac{48}{3} = 16$$

8

4

5. Calculate

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

$$\frac{5}{8} (-\frac{2}{3} + 10)$$

1.25

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?

$$3x + 110 = 270$$

$$\frac{3x}{3} = \frac{160}{3}$$

$$x = 52$$

52

hours

5 hrs

7. Solve for x and y

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

$$x + y = 10$$

$$\frac{3x - 5(10) = -2}{3}$$

$$x = -2/3$$

$$(-\frac{2}{3}) + y = 10$$

$$y = 4$$

$$x = -2/3$$

$$y = 4$$

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?

$$\frac{7x}{7} = \frac{450}{7}$$

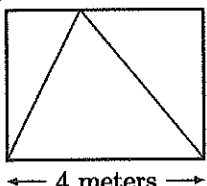
$$x = 64$$

$$\frac{69}{7} = \frac{450}{7}$$

$$x = 64$$

\$ 400

9. What is the area of the shaded region?



3 meters

8

square meters

6 sq

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

75

%

60

No calculators

boxes

Score

5/10

provided on this page.

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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

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

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

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

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

$$x = \frac{kx-2k}{3} - 4$$

2. Multiply out and simplify. Check your answer.

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

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

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

3. Put over a common

denominator and simplify.

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

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

$$\frac{x+21}{15} \cdot \frac{15-9}{15}$$

4. What is 25% of $\frac{4}{3}$ of 12?

$$12 \times \frac{4}{3} = 16$$

$$16 \times \frac{1}{4} = 4$$

4

5. Calculate

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

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

$$5 - \left(\frac{1}{3} - \frac{1}{4} \right)^{-1}$$

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

$$\frac{5}{1-12}$$

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?

$$270 = (50 \text{ mph} \cdot 3 \text{ hr}) + (60 \text{ mph} \cdot x \text{ hr})$$

$$270 = 150 + 60x$$

$$120 = 60x$$

$$x = 2$$

6 hours

7. Solve for x and y

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

$$5x + 5y = 10$$

$$8x = 8$$

$$x = 1$$

$$x = 1$$

$$y = 2$$

$$x + y = 10$$

$$1 + y = 10$$

$$y = 9$$

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?

$$3.5 \times 200 = 700$$

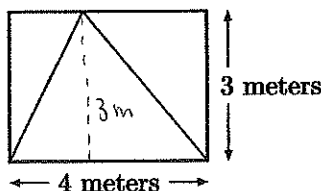
$$1 \times 150 = 150$$

$$2.5 \times 100 = 250$$

$$700 + 150 + 250 = 1100$$

\$1,100

9. What is the area of the shaded region?



6 square meters

$$A = \frac{1}{2}bh$$

$$\frac{1}{2}(4)(3) = 12 \cdot \frac{1}{2} = 6$$

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

$$\frac{200,000 - 80,000}{200,000} = \frac{120,000}{200,000} = 0.6 = 60\%$$

60 %

$$\frac{120,000}{200,000} = \frac{120}{200} = \frac{60}{100} = 60\%$$

No calculators

provided on this page.

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If you score 8-10, congratulations! You are ready for Math 34A.

1. Solve for x in the equation $\frac{3}{k}(x+4) = \frac{(x-2)}{(x+4)}$
 $3x+12 = kx-2k$

$$\frac{3(x+4)}{k} = \frac{k(x-2)}{k}$$

$$\frac{3(x+4)}{k} = x-2$$

$x =$

2. Multiply out and simplify. Check your answer.

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

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

3. Put over a common denominator and simplify.

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

$$\frac{10x+15}{15} - \frac{9x^2+6}{15}$$

$$\frac{x-7}{15}$$

4. What is 25% of $\frac{4}{3}$ of 12?

$$1\frac{1}{2} \times 12 = 18$$

$$\frac{18}{3} = 6$$

$$\frac{6}{4} = 1.5$$

$$\frac{1.5}{4} = 0.375$$

$$\frac{48}{12} = 4$$

4

5. Calculate

$$\frac{4}{12} - \frac{3}{12} = \frac{1}{12}$$

$$16 - 12 = 4^2 = 16$$

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

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

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?

$$150 \text{ mi / 3 hr}$$

$$\begin{array}{r} 270 \\ -150 \\ \hline 120 \end{array}$$

5 hours

7. Solve for x and y

$$3x - 20 = -2$$

$$3x = 18$$

$$x = 6$$

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

$$x + y = 10$$

$$x = 10 - y$$

$x = 6$

$y = 4$

$$3(10-y) - 5y = -2$$

$$30 - 3y - 5y = -2$$

$$30 - 8y = -2$$

$$-8y = -32$$

$$y = 4$$

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?

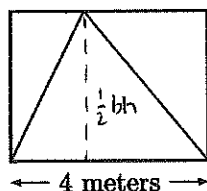
$$\begin{array}{r} \$700 \\ \$700 \\ \hline \$1400 \end{array}$$

$$\begin{array}{r} 200 \times 3.5 \\ 700 \\ \hline 1050 \end{array}$$

$$1400 - 1050 = 350$$

\$500

9. What is the area of the shaded region?



3 meters

6 square meters

$$12 - 6 = 6$$

$$\frac{1}{2}(4)(3) = 6$$

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

$$\begin{array}{r} 200,000 \\ -80,000 \\ \hline 120,000 \end{array}$$

60 %

$$\frac{120,000}{200,000} = \frac{60}{100} = 60\%$$

No calculators

provided on this page.

Scoring: A question is either 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

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

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

$$x = \frac{1}{3}k - 4$$

2. Multiply out and simplify. Check your answer.

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

3. Put over a common denominator and simplify.

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

$$\left(\frac{x-9}{15}\right)$$

4. What is 25% of $\frac{4}{3}$ of 12?

4

5. Calculate

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

125

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?

5 hours

7. Solve for x and y

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

$$x + y = 10$$

$$x = 6$$

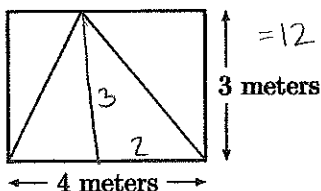
$$y = 4$$

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?

$$\begin{aligned} 7T &= 3.5 \quad 2.5 \\ -700 + 200 + 150 \\ -700 + 350 \end{aligned}$$

\$ 600

9. What is the area of the shaded region?



6 square meters

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

%

$$\frac{1}{2}(b \times h) \\ (6) = 3 \times 2 = 6$$

boxes

Samuel Hoff

Score

3 / 10

No calculators

provided on this page.

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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

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

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

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

$$x+4 = \frac{kx-2k}{3}$$

$$x = \frac{kx-2k}{3} - 4$$

2. Multiply out and simplify. Check your answer.

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

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

3. Put over a common denominator and simplify.

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

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

4. What is 25% of $\frac{4}{3}$ of 12?

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

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

4

5. Calculate

$$\begin{array}{r} 0.33 \\ -0.25 \\ \hline 0.08 \end{array}$$

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

$$\frac{4}{12} - \frac{3}{12}$$

$$(\frac{1}{3}) - \frac{1}{4}$$

$$\frac{5}{4}$$

$$(\frac{1}{12})^{-1}$$

$$16-12=4$$

$$4^2=16$$

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?

$$50 \times 3 = 150$$

$$270 - 150 = 120$$

$$120 / 60 = 2$$

$$3 + 2 = 5$$

5 hours

7. Solve for x and y

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

$$x + y = 10$$

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

$$x = 6$$

$$y = 4$$

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?

$$3.5 \times 200 = 650$$

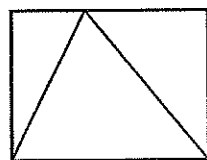
$$7 - 4.5 = 2.5 \times 100 = 250$$

$$1050$$

$$350$$

$$\begin{array}{r} 1050 \\ -700 \\ \hline 350 \end{array}$$

9. What is the area of the shaded region?



3 meters

6 square meters

$$\text{Rectangle: } 12 \text{ m}^2$$

$$3^2 + 4^2 = 25$$

$$\frac{1}{2} \cdot 6$$

$$5$$

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

$$\frac{40}{100}$$

60 %

No calculators

$$(3x+12)(x-2)$$

boxes

Score

10

$$3x^2 - 6x + 12x - 24$$

provided on this page.

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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

$$k = \frac{3x+12}{x-2} \cdot \frac{x-2}{1}$$

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

$$3x+12 = \frac{3x+12}{x-2} \cdot \frac{x-2}{1}$$

$$x =$$

$$1$$

2. Multiply out and simplify. Check your answer.

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

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

3. Put over a common denominator and simplify.

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

$$\frac{x+2}{15} \text{ or } \frac{\frac{1}{3}x+7}{5}$$

4. What is 25% of $\frac{4}{3}$ of 12?

$$4$$

5. Calculate

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

$$\frac{5}{4}$$

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?

$$5$$

hours

7. Solve for x and y

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

$$x + y = 10$$

$$x =$$

$$6$$

$$y =$$

$$4$$

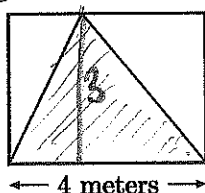
$$a^2 + b^2 = c^2$$

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?

\$

$$400$$

9. What is the area of the shaded region?



3 meters

$$6$$

square meters

$$+ \frac{1}{2}bh$$

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

$$\frac{20}{80} = \frac{5}{2}$$

$$60$$

%

No calculators

provided on this page.

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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

$$\frac{3(x+4)}{(x+4)} = \frac{k(x-2)}{(x-4)}$$

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

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

$$3x+14 = kx$$

$x =$

2. Multiply out and simplify. Check your answer. Pemas

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

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

$$1 \text{ know you're } (x-1)(x+1)$$

3. Put over a common denominator and simplify.

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

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

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

$$\frac{4}{3} \times \frac{12}{1} = 16$$

$$x \cdot 25 = 4$$

4

5. Calculate

20

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

$$\frac{20}{289}$$

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?

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

$$150 + 60x = 270$$

$$60x = 120 \quad x = 2$$

5

hours

7. Solve for x and y

$$\begin{aligned} x+4 &= 10 \\ -4 &-4 \\ \hline x &= 6 \end{aligned}$$

$$\begin{aligned} 3x-5y &= -2 \\ x+y &= 10-y \\ -y &-y \\ \hline x &= 10-y \end{aligned}$$

$$3(-y+10) - 5y = -2$$

$$-3y + 30 - 5y = -2 \rightarrow -8y + 30 = -2 \rightarrow -8y = -32 \rightarrow y = 4$$

$x = 6$

$y = 4$

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?

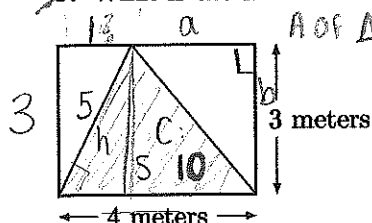
$$7 \text{ tons @ } \$100/\text{ton}$$

$$3.5(\$200) + 1(\$150) +$$

$$2.5(\$100) = 250 + 150 + 700 =$$

\$ 1,100

9. What is the area of the shaded region?



$$A \text{ of } \Delta = b \times h / 2$$

6 square meters

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

what % of

60

%

200,000 is 80,000 keeping \$120,000

\$50,000 is 25% 200,000 x (1/4) = 50,000

No calculators

provided on this page.

Scoring: A question is either 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

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

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

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

$$x = \frac{kx}{3} - \frac{2}{3}k - 4$$

2. Multiply out and simplify. Check your answer.

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

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

3. Put over a common denominator and simplify.

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

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

4. What is 25% of $\frac{4}{3}$ of 12?

$$\frac{4}{3} \cdot 12 = \frac{4}{3} \cdot \frac{36}{3} = \frac{144}{9}$$

$$\frac{144}{9} \cdot \frac{1}{4} = \frac{144}{36} = 4$$

$$4$$

5. Calculate

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

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?

$$150 \text{ miles} = 3 \text{ hours}$$

$$210 = 4 \text{ h.}$$

$$270 = 5 \text{ h}$$

$$5 \text{ hours}$$

7. Solve for x and y

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

$$x + y = 10$$

$$x =$$

$$y =$$

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?

$$7 \text{ tons} \quad \$100 \text{ per ton}$$

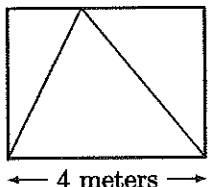
$$\$200 - 3.5$$

$$\$150 - 1$$

$$\$100 - 2.5$$

$$\$1100$$

9. What is the area of the shaded region?



square meters

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

$$\frac{200,000 - 80,000}{200,000}$$

$$60 \%$$

boxes

9/10

No calculators

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If you score 8-10, congratulations! You are ready for Math 34A.

	1	x
1	1	x
-2x	-2x	-2x^2
x^2	x^2	x^3

1. Solve for x in the equation

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

$x =$

2. Multiply out and simplify. Check your answer.

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

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

3. Put over a common

denominator and simplify.

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

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

4. What is 25% of $\frac{4}{3}$ of 12?

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

4

5. Calculate

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

$\frac{5}{4}$

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?

$$270 - 150 = 120$$

5

hours

7. Solve for x and y

$$\begin{aligned} 3x - 5y &= -2 \\ 5(x+y) &= 10 \\ 5x + 5y &= 10 \end{aligned}$$

$x = 6$

$y = 4$

$$\frac{8x}{8} = \frac{48}{8} \Rightarrow x = 6$$

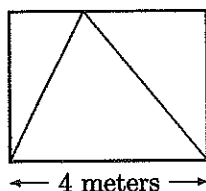
$$6 + y = 10 \Rightarrow y = 4$$

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?

$$7 \times 100 = 700$$

\$ 400

9. What is the area of the shaded region?



3 meters

6

square meters

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

$$\frac{200000 - 80000}{200000} = \frac{120000}{200000} = 0.6$$

60

%

boxes

9 / 10

No calculators

provided on this page.

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1. Solve for x in the equation

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

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

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

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

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

2. Multiply out and simplify. Check your answer.

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

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

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

3. Put over a common

denominator and sim-

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

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

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

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

4. What is 25% of $\frac{4}{3}$ of 12?

$$\frac{1}{4} \cdot \frac{4}{3} = \frac{1}{3} \cdot 12 = 4$$

$$4$$

5. Calculate

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

$$\frac{5}{4}$$

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?

$$50 \text{ mph} \cdot 3$$

$$= 150 \text{ mi}$$

$$60 \cdot x = 120$$

$$x = 2$$

$$2 + 3 = 5 \text{ hrs}$$

$$5 \text{ hours}$$

7. Solve for x and y

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

$$x + y = 10$$

$$x = 10 - y$$

$$3(10 - y) - 5y = -2$$

$$30 - 3y - 5y = -2$$

$$x = 6$$

$$y = 4$$

$$-8y = -32$$

$$y = 4$$

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?

$$3.5 \text{ tons} \cdot \$200$$

$$7 \text{ tons} = \$700$$

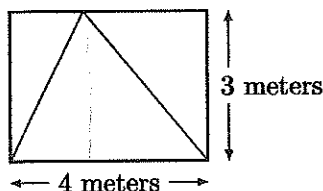
$$3.5 (\$200) = 700$$

$$1/4 (\$150) = 150$$

$$2.5 (\$100) = 250 + 150 = 400$$

$$\$400$$

9. What is the area of the shaded region?



$$6 \text{ square meters}$$

$$A_{\text{triangle}} = \frac{1}{2}bh = \frac{1}{2}(4)(3) = 6$$

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

$$200 - 80 = 120$$

$$\frac{120}{200} = .6$$

$$60 \%$$

No calculators

boxes

Bryan
Vinh

Score

7/10

provided on this page.

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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

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

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

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

2. Multiply out and simplify. Check your answer.

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

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

3. Put over a common denominator and simplify.

$$\frac{10x + 15}{15} - \frac{2x + 3}{3} - \frac{3x + 2}{5}$$

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

4. What is 25% of $\frac{4}{3}$ of 12?

4

5. Calculate

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

$$\frac{5}{6416}$$

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?

120

5

hours

7. Solve for x and y

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

$$x + y = 10$$

$$x = 6$$

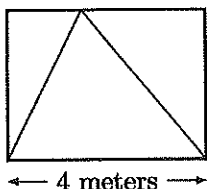
$$y = 4$$

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?

$$\begin{array}{r} 3.5 \quad 700 \\ 1 \quad 150 \\ 2.5 \quad 250 \end{array}$$

\$ 400

9. What is the area of the shaded region?



3 meters

6

square meters

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

60

%

2 / 10

No calculators

provided on this page.

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If you score 8-10, congratulations! You are ready for Math 34A.

1. Solve for x in the equation

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

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

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

$$\frac{3-k}{1}x = \frac{-12-2k}{1}$$

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

$$x = \frac{-k-4}{3}$$

2. Multiply out and simplify. Check your answer.

$$(1-x)(1+x^2+x^3+x^4+x^5+x^6+x^7+x^8+x^9+x^{10})$$

$$1-x-x^2-x^3-x^4-x^5-x^6-x^7-x^8-x^9-x^{10}+x^2+x^3+x^4+x^5+x^6+x^7+x^8+x^9+x^{10}+x^{11}+x^{12}+x^{13}+x^{14}+x^{15}+x^{16}+x^{17}+x^{18}+x^{19}+x^{20}$$

$$1-x^{20}$$

3. Put over a common denominator and simplify.

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

$$x+8$$

4. What is 25% of $\frac{4}{3}$ of 12?

5. Calculate

$$356 - (1/3 - 1/4)^{-2}$$

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

$$356 - (1/12 - 1/16)^{-2}$$

$$45$$

$$\frac{16}{196} = \frac{16}{260}$$

$$\frac{356}{260} = \frac{356}{260}$$

$$20 - \frac{1}{9} - \frac{1}{16} = 20 + 16 + 9$$

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?

$$50 \text{ mph} = 3 \text{ hr}$$

$$50 \times 3 = 150 \text{ miles}$$

$$270 - 150 = 120 \text{ miles}$$

$$120 / 60 = 2 \text{ hours}$$

$$3 + 2 = 5 \text{ hours}$$

7. Solve for x and y

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

$$x + y = 10$$

$$3x - 5(10) = -2$$

$$3x - 50 = -2$$

$$-54 = -2 - 5y$$

$$x = 10, -2/3$$

$$y = 2/5, 10$$

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?

$$7 \text{ tons} \times \$100 = \$700$$

$$3.5 \text{ tons} \times \$200 = \$700$$

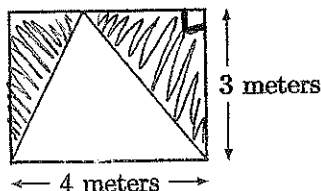
$$1 \text{ ton} \times \$150 = \$150$$

$$2.5 \text{ tons} \times \$100 = \$250$$

$$\$700 + \$700 + \$150 + \$250 = \$1800$$

$$\$1800 - \$700 = \$1100$$

9. What is the area of the shaded region?



square meters

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

$$\$200,000 - \$80,000 = \$120,000$$

$$\frac{120,000}{200,000} = 0.6 = 60\%$$

$$60\%$$

No calculators

provided on this page.

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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

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

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

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

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

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

$$-12 - kx$$

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

2. Multiply out and simplify. Check your answer.

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

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

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

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

3. Put over a common

denominator and simplify.

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

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

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

4. What is 25% of $\frac{4}{3}$ of 12?

$$\frac{4}{3} \cdot 12 = \left(\frac{48}{3} \right) (0.25)$$

$$= 16(0.25) = 4$$

$$4$$

5. Calculate

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

$$\frac{4}{12} - \frac{3}{12} = \frac{1}{12}$$

$$16 - 12 = 4^2 = 16$$

$$\frac{20}{289}$$

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?

$$\begin{array}{r} 270 \\ -150 \\ \hline 120 \end{array}$$

$$5 \text{ hours}$$

7. Solve for x and y

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

$$x + y = 10$$

$$x = 10 - y$$

$$x = 6$$

$$y = 4$$

$$3(10-y) - 5y = -2$$

$$30 - 3y - 5y = -2$$

$$30 - 8y = -2$$

$$-8y = -32$$

$$y = 4$$

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?

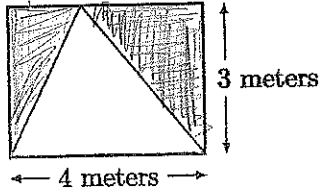
$$\begin{array}{r} \$700 \\ + \$150 \\ + 250 \\ \hline \$1100 \end{array}$$

$$\begin{array}{r} \$200 \\ \times 3.5 \\ \hline 1000 \\ + 600 \\ \hline \$1700 \end{array}$$

$$\$400$$

$$\begin{array}{r} \$100 \\ \times 2.5 \\ \hline 500 \\ + 200 \\ \hline 700 \end{array}$$

9. What is the area of the shaded region?



$$6 \text{ square meters}$$

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

$$\frac{120}{200} = \frac{12}{20} = \frac{6}{10}$$

$$60 \%$$

Sebastian Avila

Math 34A Winter 2021
Entrance Quiz

Put your final answers in the

Score

6/10

No calculators

provided on this page.

without dumb mistakes
an 8/10.

Scoring: A question is either 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

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

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

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

$$x = -7$$

2. Multiply out and simplify. Check your answer. $1-2x+x^2+x-2x^2+x^3$

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

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

3. Put over a common

denominator and simplify.

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

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

4. What is 25% of $\frac{4}{3}$ of 12?

$$\frac{1}{4} \cdot \frac{4}{3} \cdot 12 = \frac{4}{12} \cdot 12 = 4$$

$$4$$

5. Calculate

20

PEMDAS

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

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

$$16 - \left(\frac{1}{12}\right)^{-1}$$

$$16 - 12 = 4$$

$$5/4$$

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?

$$50 \text{ for } 3 \quad 60 \text{ for } \frac{120}{60} = 2$$

$$5$$

hours

$$270 - 150 = 120$$

7. Solve for x and y

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

$$x + y = 10$$

$$x = 10 - y$$

$$3(10-y) - 5y = -2$$

$$30 - 3y - 5y = -2$$

$$x + 4 = 10$$

$$-8y = -32 \quad y = 4 \quad x = 6$$

$$x = 6$$

$$y = 4$$

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?

$$7 \text{ tons for } 100 \text{ each} = \$700 \text{ spent}$$

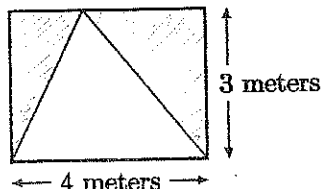
$$3.5 \times 200 = \$700 \text{ made}$$

$$1 \text{ ton} \times 150 = \$150$$

$$7 - 4.5 = 2.5 \times 100 = \$250$$

$$\$1100 \quad 400$$

9. What is the area of the shaded region?



$$12.5 \text{ or } 25 \text{ I forgot lol square meters}$$

$$a^2 + b^2 = c^2$$

$$9 + 16 = 25$$

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

$$\frac{200,000}{80,000}$$

$$\frac{20}{8} = 2.5$$

$$60$$

%

$$\frac{5}{2}$$

$$\frac{2}{5} = 40\%$$

$$100 - 40$$

emily cohen

Math 34A Winter 2021
Entrance Quiz

Put your final answers in the

Score

10 / 10

No calculators

provided on this page.

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If you score 8-10, congratulations! You are ready for Math 34A.

1. Solve for x in the equation

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

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

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

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

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

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

2. Multiply out and simplify. Check your answer.

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

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

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

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

3. Put over a common denominator and simplify.

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

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

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

4. What is 25% of $\frac{4}{3}$ of 12?

$$\frac{1}{4} \cdot \frac{4}{3} \cdot 12$$

$$\frac{1}{3} \cdot 12 = 4$$

$$4$$

5. Calculate

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

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

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

$$\frac{4}{12} - \frac{3}{12} = \frac{1}{12}$$

$$(\frac{1}{12})^{-1}$$

$$= 12$$

$$16 - 12 = 4$$

$$\frac{5}{4}$$

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?

$$150 \text{ miles in } 3 \text{ hr}$$

$$270 \text{ total}$$

$$270 - 150 = 120$$

$$120 \text{ miles in } 2 \text{ hr}$$

$$60 \text{ mph}$$

$$5 \text{ hours}$$

7. Solve for x and y

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

$$x + y = 10$$

$$x = 10 - y$$

$$3(10 - y) - 5y = -2$$

$$30 - 3y - 5y = -2$$

$$30 - 8y = -2$$

$$x = 6$$

$$y = 4$$

$$-8y = -32$$

$$y = 4$$

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?

$$7 \text{ tons} \times \$100 = \$700$$

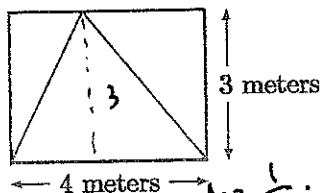
$$4 \text{ tons sold at } \$200 = \$800$$

$$200 + 150 + 100 = 450$$

$$800 - 450 = 350$$

$$\$400$$

9. What is the area of the shaded region?



$$6 \text{ square meters}$$

$$A = \frac{1}{2} \cdot 3 \cdot 4$$

$$= 6 \text{ m}^2$$

$$12 - 6 = 6$$

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

$$80,000$$

$$200,000$$

$$\times 100$$

$$60 \%$$

$$\frac{80}{200} = \frac{16}{40}$$

$$= \frac{4}{10} = 40\%$$

$$100 - 40 = 60$$

No calculators

provided on this page.

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If you score 8-10, congratulations! You are ready for Math 34A.

1. Solve for x in the equation

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

-4 -4

$$x = 3$$

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

-12 -12

2. Put over a common

denominator and simplify.

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

15 15

$$\frac{5x+5}{15}$$

3. Calculate

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

$$IDK$$

4. Solve for x and y

$$\begin{aligned} 3x - 5y &= -2 \\ x + y &= 10 \end{aligned}$$

+5y +5y

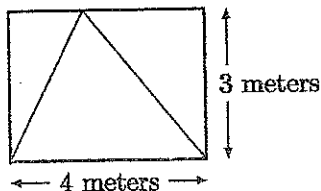
$$3x = 7$$

$$y = \frac{10x}{y}$$

$$x = 7/3$$

$$y = 10$$

5. What is the area of the shaded region?



$$119 \text{ square meters}$$

6. Multiply out and simplify. Check your answer.

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

x x^2 x^3

$$1 - x^3$$

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

$$4$$

8. 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?

hours

9. 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?

$$\$700$$

$$\$1150$$

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

$$35 \%$$

No calculators

provided on this page.

Scoring: A question is either 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.

Name: Zihu Zhu

1. Solve for x in the equation

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

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

2. Multiply out and simplify. Check your answer.

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

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

3. Put over a common denominator and simplify.

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

$$\frac{x}{15} + \frac{3}{5}$$

4. What is 25% of $\frac{4}{3}$ of 12?

$$4$$

5. Calculate

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

$$\frac{5}{4}$$

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?

$$5 \text{ hours}$$

7. Solve for x and y

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

$$x + y = 10$$

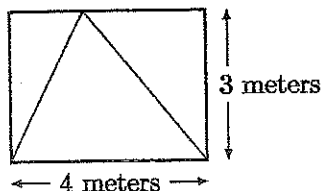
$$x = 6$$

$$y = 4$$

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?

$$\$ 400$$

9. What is the area of the shaded region?



$$6 \text{ square meters}$$

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

$$60 \%$$

No calculators

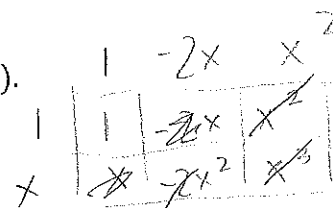
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If you score 4-7, seek help NOW: maybe enroll in CLAS?

If you score 8-10, congratulations! You are ready for Math 34A.



1. Solve for x in the equation
 $3x + 12 = kx - k2$

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

$$\frac{3x - kx}{(3-k)} = \frac{-12-k2}{(3-k)}$$

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

2. Multiply out and simplify. Check your answer.

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

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

3. Put over a common

denominator and simplify.

$$\frac{10x+15}{3} - \frac{9x+6}{5}$$

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

$$\frac{x+21}{15}$$

4. What is 25% of $\frac{4}{3}$ of 12?

$$\frac{4}{3} \left(\frac{12}{1} \right) \cdot \frac{1}{4} = 4$$

$$4$$

5. Calculate

$$\frac{1}{3} - \frac{1}{4} = \frac{4}{12} - \frac{3}{12} = \frac{1}{12}$$

$$\frac{1}{12} = 12$$

$$4^2 = 16$$

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

$$\frac{5}{4}$$

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?

$$150 + 60x = 270$$

$$60x = 120$$

$$x = 2$$

$$5 \text{ hours}$$

7. Solve for x and y

$$-8y + 30 = -2$$

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

$$x + y = 10$$

$$x = -y + 10$$

$$3(-y + 10) - 5y = -2$$

$$-3y + 30 - 5y = -2$$

$$x = 6$$

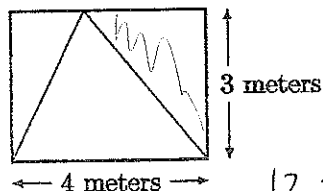
$$y = 4$$

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?

$$\begin{array}{r} -700 \\ +150 \\ +250 \\ \hline 400 \end{array}$$

$$\$400$$

9. What is the area of the shaded region?



$$6 \text{ square meters}$$

$$12 - \left(\frac{1}{2}(12) \right)$$

$$12 - 6 = 6$$

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

$$\frac{120,000}{200,000} = 0.6$$

$$60 \%$$

$$\begin{array}{r} 200,000 \\ -80,000 \\ \hline 120,000 \end{array}$$

$$\frac{120,000}{200,000}$$

No calculators

Score

9/10

provided on this page.

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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

$$14 = kx - 3x$$

$$14 = x(k-3)$$

$$\frac{14}{k-3} = x$$

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

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

$$-3x \quad -3x$$

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

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

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

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

2. Multiply out and simplify. Check your answer.

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

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

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

3. Put over a common denominator and simplify.

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

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

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

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

4. What is 25% of $\frac{4}{3}$ of 12?

$$12 \times \frac{4}{3} = 16$$

$$16 \times 0.25 = 4$$

5. Calculate

$$\frac{20}{112} \div 2 = \frac{10}{112}$$

$$\frac{10}{112} = \frac{5}{56}$$

$$\frac{5}{56}$$

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?

$$\frac{50 \text{ mph} \times 3 \text{ hrs}}{3 \text{ hrs}} = \frac{60 \text{ mph} \times x}{x}$$

$$150 = 60x$$

$$x = 2.5$$

$$3 + 2.5 = 5.5$$

7. Solve for x and y

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

$$x + y = 10$$

$$y = -x + 10$$

$$x = 6$$

$$y = 4$$

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?

$$7 \times 100 = 700$$

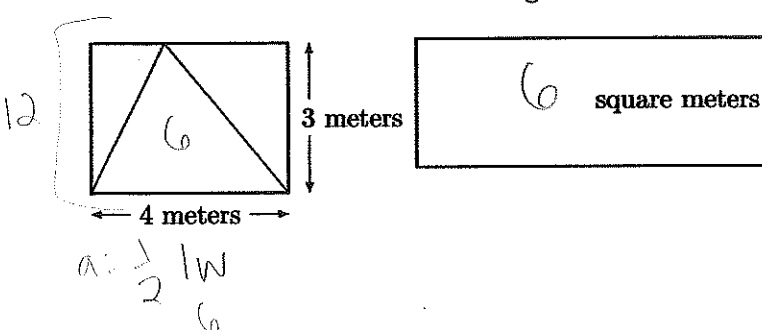
$$3.5 \text{ tons} = 700$$

$$1 \text{ ton} = 150$$

$$2.5 = 250$$

$$\$ 400$$

9. What is the area of the shaded region?



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

$$\frac{200,000 - 80,000}{200,000} = \frac{120,000}{200,000} = 0.6$$

$$0.6 \times 100 = 60\%$$

$$60\%$$

No calculators

provided on this page.

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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 1. Solve for x in the equation

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

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

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

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

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

2. Multiply out and simplify. Check your answer.

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

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

+1 3. Put over a common

denominator and simplify.

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

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

4. What is 25% of $\frac{4}{3}$ of 12?

$$\frac{1}{4} \left(\frac{4}{3} \right) (12) = \frac{1}{3} (12) = 4$$

$$\frac{1 \times 4 \times 12}{4 \times 3 \times 1} = \frac{4 \times 12}{1 \times 3} = \frac{48}{3} = 16$$

5. Calculate

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

$$\frac{20}{289}$$

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?

$$50 \text{ mph} (3 \text{ hr}) = 150 \text{ miles}$$

$$270 - 150 = 120 \text{ mi}$$

$$\frac{120 \text{ mi}}{60 \text{ mph}} = 2 \text{ hr}$$

5 hours

7. Solve for x and y

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

$$x + y = 10$$

$$x = 10 - y$$

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

$$30 - 3y - 5y = -2 \quad -8y = -32 \quad y = 4$$

$$x = 6$$

$$y = 4$$

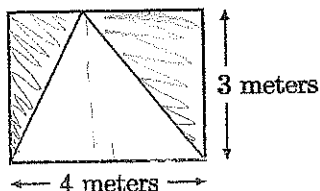
8. An entrepreneur bought 7 tons of apples for \$100 per ton.

+1 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?

$$\begin{array}{r} -700 \\ +150 \\ +150 \\ +250 \\ \hline 1100 \end{array}$$

\$ 400

9. What is the area of the shaded region?



6 square meters

$$12 - \frac{4(3)}{2} = 12 - 6 = 6$$

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

$$\frac{200,000 - 80,000}{200,000} = \frac{120,000}{200,000} = \frac{12}{20} = \frac{3}{5} = 60\%$$

60 %

Math 34A Winter 2021
Entrance Quiz

Put your final answers in the

Score

6 / 10

No calculators

provided on this page.

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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

$$\begin{aligned} 3x + 12 &= k - 2k \\ 3x + 12 &= -2k - 12 \\ 3x &= -2k - 24 \\ x &= \frac{-2k - 24}{3} \end{aligned}$$

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

2. Multiply out and simplify. Check your answer.

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

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

3. Put over a common denominator and simplify.

$$\frac{2x+3}{3} - \frac{3x+2}{5} = \frac{5(2x+3) - 3(3x+2)}{15} = \frac{10x+15-9x-6}{15} = \frac{x+9}{15}$$

$$x + 9$$

4. What is 25% of $\frac{4}{3}$ of 12?

$$\frac{1}{4} \cdot \frac{4}{3} \cdot \frac{4}{12} = \frac{1}{3}$$

$$4$$

5. Calculate

$$\frac{20}{16 - \left(\frac{1}{3} - \frac{1}{4}\right)^{-2}} = \frac{20}{16 - \left(\frac{4}{3} - \frac{3}{4}\right)^{-2}} = \frac{20}{16 - \left(\frac{16}{3} - \frac{9}{4}\right)^{-2}} = \frac{20}{16 - \left(\frac{64}{3} - \frac{81}{4}\right)^{-2}} = \frac{20}{16 - \left(\frac{256}{12} - \frac{162}{12}\right)^{-2}} = \frac{20}{16 - \left(\frac{94}{12}\right)^{-2}} = \frac{20}{16 - \frac{144}{94^2}} = \frac{20}{16 - \frac{144}{8836}} = \frac{20}{\frac{141136 - 144}{8836}} = \frac{20 \cdot 8836}{141136 - 144} = \frac{176720}{140992} = \frac{2209}{17624}$$

$$\frac{240}{256} = \frac{15}{16}$$

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?

$$\begin{aligned} 50 \times 3 &= 150 \\ 270 - 150 &= 120 \\ 120 / 60 &= 2 \end{aligned}$$

$$2 \text{ hours}$$

7. Solve for x and y

$$\begin{aligned} 3x - 5y &= -2 \\ x + y &= 10 \\ 18 - 20 &= -2 \\ 6 + 4 &= 10 \end{aligned}$$

$$x = 6$$

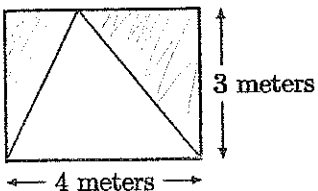
$$y = 4$$

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?

$$\begin{aligned} 3.5 \times 200 &= 700 \\ + 150 &= 850 \\ 2.5 \times 100 &= 250 \end{aligned}$$

$$\$ 400$$

9. What is the area of the shaded region?



square meters

$$6$$

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

$$\frac{80,000}{200,000}$$

$$\frac{80}{200} = \frac{2 \cdot 40}{5 \cdot 40} = \frac{2}{5} = \frac{40}{100}$$

$$100 - 40 = 60$$

$$60 \%$$

No calculators

provided on this page.

Scoring: A question is either 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.

Crystal Mendoza

1. Solve for x in the equation

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

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

2. Multiply out and simplify. Check your answer.

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

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

3. Put over a common denominator and simplify.

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

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

4. What is 25% of $\frac{4}{3}$ of 12?

$$\frac{4}{3} \cdot \frac{1}{4} = 16$$

$$25\% = 14 \cdot 16 = 4$$

$$4$$

5. Calculate

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

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?

$$50 \times 3 = 150 \text{ miles}$$

$$270 - 150 = 120 \text{ miles}$$

$$120 \text{ miles} \div 60 \text{ mph} = 2 \text{ hours}$$

$$3 + 2 \text{ hours} = 5 \text{ hours}$$

$$5 \text{ hours}$$

7. Solve for x and y

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

$$x + y = 10$$

$$3(6) - 5(4) = -2$$

$$18 - 20 = -2$$

$$6 + 4 = 10$$

$$x = 6$$

$$y = 4$$

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?

$$200 \times 3.5 = 700$$

$$+ 150$$

$$= 850$$

$$100 \times 3.5 = 350$$

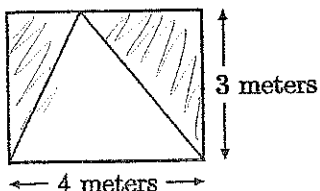
$$+ 250$$

$$= 600$$

$$850 - 600 = 250$$

$$\$ 400$$

9. What is the area of the shaded region?



square meters

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

$$200,000 - 80,000 = 120,000$$

$$120,000 \div 200,000 = 0.6$$

$$0.6 \times 100 = 60\%$$

%

No calculators

provided on this page.

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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

$$x = \frac{-2(x+6)}{5-x}$$

$$x = \frac{-2x-12}{5-x}$$

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

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

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

$$x(3-k) = -2(k+6)$$

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

2. Multiply out and simplify. Check your answer.

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

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

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

3. Put over a common denominator and simplify.

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

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

$$\frac{x+21}{15}$$

4. What is 25% of $\frac{4}{3}$ of 12?

$$\frac{4}{3} \cdot \frac{12}{1}$$

$$\frac{48}{3}$$

$$= 16$$

$$4$$

5. Calculate

$$17 \overline{) 16.83}$$

$$20$$

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

$$\left(\frac{4}{12} - \frac{3}{12}\right)^{-1}$$

$$\left(16 - \left(\frac{1}{12}\right)^{-1}\right)^2$$

$$\left(16 + \frac{1}{12}\right)^2$$

$$\left(\frac{193}{12}\right)^2$$

$$16.83$$

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?

$$150 \quad 270$$

$$\quad \quad -150$$

$$\quad \quad \quad 120$$

$$3 + 2 = 5$$

$$5 \text{ hours}$$

7. Solve for x and y

$$-2+6y=32$$

$$6y=32$$

$$y=5.3$$

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

$$x+y=10$$

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

$$x+5.3=10$$

$$x=4.7$$

$$x = 4.7$$

$$y = 5.3$$

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

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

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?

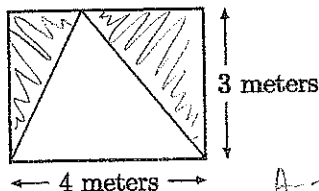
$$3.5 \quad 200 = 700$$

$$1 \quad 150 = 150$$

$$2.5 \quad 100 = 250$$

$$\$ 1100$$

9. What is the area of the shaded region?



$$6 \text{ square meters}$$

$$A = \frac{1}{2}bh$$

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

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

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

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

$$120,000$$

$$60 \%$$

$$6 \overline{) 120.000}$$

$$50$$

$$\frac{1}{2}$$

$$\frac{1}{10}$$

$$6/10$$

No calculators

provided on this page.

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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

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

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

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

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

can you simplify?

2. Multiply out and simplify. Check your answer.

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

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

3. Put over a common denominator and simplify.

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

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

4. What is 25% of $\frac{4}{3}$ of 12?

$$\frac{4}{3} \text{ of } 12 = 16$$

$$25\% \text{ of } 16 = 4$$

$$25\% \text{ of } 16 = 4$$

5. Calculate

$$\left(\frac{4}{12} - \frac{8}{12}\right)$$

$$\frac{20}{\left(16 - \left(\frac{14}{34} - \frac{31}{34}\right)^{-1}\right)^2}$$

$$\left(\frac{1}{12}\right)^{-1}$$

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

$$\frac{5}{4}$$

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

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?

$$50 \text{ mph } 3 \text{ hrs}$$

$$60 \text{ mph}$$

$$120 \text{ miles @ } 60 \text{ mph}$$

$$= 2 \text{ hours}$$

$$5$$

hours

7. Solve for x and y

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

$$+ 5x - 5y = 30$$

$$\frac{8x}{8} = \frac{48}{8} \quad x = 6$$

$$-6 + y = 10$$

$$x = 6$$

$$y = 4$$

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?

$$\$ 700$$

$$3.5 \text{ tons @ } \$200/\text{ton}$$

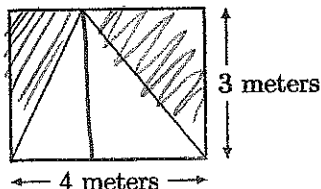
$$1 \text{ ton @ } 150$$

$$2.5 \text{ tons @ } 100$$

$$50 + (3.5)(200)$$

$$\$ 400$$

9. What is the area of the shaded region?



$$12 - 6 = 6$$

$$6 \text{ square meters}$$

$$\text{Area} = \frac{1}{2} \cdot 3 \cdot 4$$

$$\left(\frac{1}{2}\right)(4)(3) = 6$$

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

$$120,000 \text{ keep}$$

$$120,000 / 200,000$$

$$12/20 = \frac{6}{10}$$

$$60\%$$

%

No calculators:

provided on this page.

Scoring: A question is either 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.

2. Solve for x in the equation

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

 $x =$

2/ Multiply out and simplify. Check your answer.

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

③ Put over a common denominator and simplify.

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

$19x + 21$

4. What is 25% of $\frac{4}{3}$ of 12?

$$\begin{array}{r} .75 \\ 4 \overline{) 3.0} \\ \underline{-28} \\ 204 \overline{) 12} \end{array}$$

.36

2519.00
- 36

2518.64

5. Calculate

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

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?

$$\begin{array}{r} 3 \\ 50 \\ 150 \\ \hline 270 \\ - 150 \\ \hline 120 \end{array}$$

2. hours

7. Solve for x and y

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

$$\begin{array}{r} 8x - 5y = -2 \\ + 5y \\ \hline 8x = -2 \end{array} \quad \begin{array}{r} x + y = 10 \\ - y \\ \hline x = 10 \end{array}$$

$$\begin{aligned} \frac{3x}{3} &= \frac{-2+5y}{3} & \frac{-2+5y}{3} + y &= 10 & 5y + 1y &= 30 \\ x &= \frac{-2+5y}{3} & -2+5y + y &= 30 & 6y &= 30 \end{aligned}$$

$$x = 6$$

$$y = 4$$

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?

\$700 = total

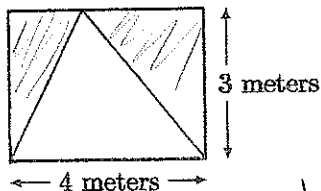
700(4) 3.5 2.5

\$150 4.5

\$130 1000

\$ 300

9. What is the area of the shaded region?


$$s_d = 12$$

1. W

$$\begin{array}{r} 3.4 \\ \underline{2} \end{array}$$

12
k

12
- 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?

2100,000
80,000

120,000

40 %

$$\begin{array}{r} 200,000 \overline{) 80,000.00} \\ \underline{- 80,000} \\ 00 \end{array}$$

Joey Moody

Math 34A Winter 2021
Entrance Quiz

Put your final answers in the

Score

3 / 10

No calculators

provided on this page.

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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

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

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

$$-kx$$

$x =$

2. Multiply out and simplify. Check your answer.

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

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

3. Put over a common

denominator and sim-

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

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

$$\frac{-5x+9}{15}$$

4. What is 25% of $\frac{4}{3}$ of 12?

$$25 \cdot \frac{4}{3} \cdot 12$$

$$\frac{1}{4} \cdot \frac{4}{3} \cdot 12 = \frac{48}{12}$$

4

5. Calculate

$$\frac{20}{14^2}$$

on back

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

$$\frac{20}{196}$$

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?

$$50 \cdot 3 = 150 \text{ mi}$$

$$270 - 150 = 120 \text{ mi}$$

$$60 \text{ mph} \cdot x = 120 \text{ mi}$$

$$2 \text{ hours}$$

5 hours

7. Solve for x and y

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

$$x + y = 10$$

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

$$+ 5y$$

$$3x = 5y - 2$$

$$x = 4.8$$

$$y = 5.2$$

$$x = \frac{5y-2}{3}$$

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?

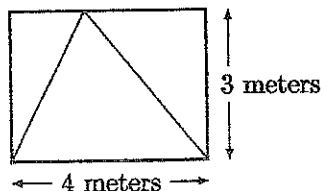
$$3.5 \cdot 200 = 700$$

$$1 \cdot 150 = 150$$

$$2.5 \cdot 100 = 250$$

\$ 650

9. What is the area of the shaded region?



square meters

$$a = \frac{bh}{2} (?)$$

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

$$200,000$$

$$80,000$$

$$\frac{20}{8}$$

$$8 \overline{) 20.405}$$

95.595 %

$$\frac{97}{100} \cdot 1000 = 970$$

$$2.405$$

$$95.595$$

boxes

Score

7 / 10

No calculators

provided on this page.

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If you score 8-10, congratulations! You are ready for Math 34A.

1. Solve for x in the equation

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

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

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

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

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

2. Multiply out and simplify. Check your answer.

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

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

3. Put over a common denominator and simplify.

$$\frac{10x+15}{15} - \frac{6x+6}{15} = \frac{10x+15-6x-6}{15} = \frac{4x+9}{15}$$

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

$$\frac{x+9}{15} \rightarrow \frac{x+9}{5}$$

4. What is 25% of $\frac{4}{3}$ of 12?

$$\frac{25}{100} \times \frac{4}{3} \times 12 = \frac{1}{4} \times \frac{4}{3} \times 12 = 4$$

$$4$$

5. Calculate

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

$$\frac{20}{16 - (\frac{1}{3} - \frac{1}{4})^{-1}} = \frac{20}{16 - 12} = \frac{20}{4} = 5$$

$$\frac{20}{1686} \rightarrow \frac{1}{84.3}$$

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

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?

$$150 + 60x = 270$$

$$\frac{270-150}{60} = 2$$

$$5 \text{ hours}$$

7. Solve for x and y

$$x = 6$$

$$y = 4$$

$$18-5y = -2 \quad 3x-5y = -2$$

$$5(x+y) = 10$$

$$20 = 5y$$

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

$$5x+5y = 50$$

$$8x = 48$$

$$x = 6$$

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?

$$7 \div 2 = 3.5$$

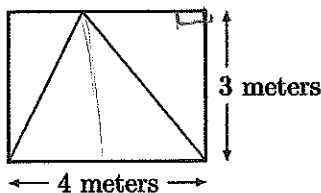
$$3.5$$

$$1 \times 150$$

$$2.5 \times 100 = 250$$

$$\$400$$

9. What is the area of the shaded region?



$$6 \text{ square meters}$$

$$L \cdot w = 4 \cdot 3 = 12$$

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

$$\frac{80,000}{200,000} \times 100 = 40\%$$

$$60\%$$

$$\frac{120,000}{200,000} \times 100 = 60\%$$