

No calculators

boxes

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

$$\frac{x(3-15)}{3-15} = \frac{-215-12}{3-15}$$

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

$$3x + 12 = 15x - 2k$$

$$3x - 15x = -2k - 12$$

$$x = \frac{(-215-12)}{(3-15)}$$

2. Multiply out and simplify. Check your answer.

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

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

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?

4

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

Solve for x and y

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

$$x + y = 10$$

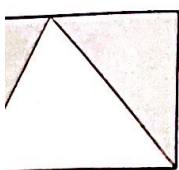
$$x = 6$$

$$y = 4$$

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

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?

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

$$\frac{8}{20} = \frac{4}{10} = 40\% \text{ tax}$$

60

%

Diagnostic Quiz work

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

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

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

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

$$4. \frac{12}{1} \times \left(\frac{4}{3}\right) = \frac{48}{3}$$

$$\left(\frac{48}{3}\right) \times \left(\frac{1}{4}\right) = \frac{48}{12} = 4$$

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

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

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

$$6. 270 = 50(3) + 60x$$

$$270 = 150 + 60x$$

$$120 = 60x$$

$$2 = x$$

$$2+3=5$$

$$7. 3x - 5y = -2 ; x + y = 10$$

$$x = 10 - y$$

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

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

$$-8y = -32$$

$$y = 4$$

$$x + 4 = 10$$

$$x = 6$$

8. 7 tons \$100

$$(3.5)(250) + 150 + 2.5(100)$$

$$700 + 150 + 250$$

$$\$1100$$

$$- 700$$

$$\$400$$

$$\begin{array}{r} 200 \\ 3.5 \\ \hline 1000 \\ 6000 \\ 7000 \end{array}$$

9.