

NAME: _____

Place your answers in the spaces provided. You must show your work to receive credit.

(6 pts) 1) Simplify. Do not use a calculator.

$$\frac{\frac{3}{5} + \frac{1}{3}}{\frac{7}{15}}$$

(8 pts) 2) Perform the indicated operations and simplify. Do not use a calculator.

Express your answer as a fraction in lowest terms.

$$\frac{3}{4} - \frac{1}{2} \frac{7}{8} + \frac{1}{2} - \frac{1}{4}$$



(8 pts) 3) Write the following as a ratio of two integers. Express your answer as a fraction in lowest terms.

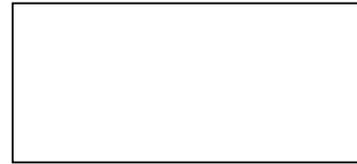
$$1.\overline{745}$$



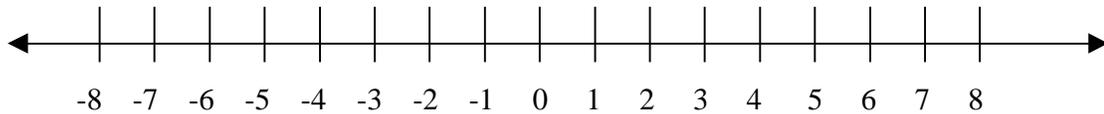
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(12 pts) 4)

(8 pts) (a) Write $|x - 3| \leq 2$ without the absolute value symbol and solve for x .

(4 pts) (b) Show the corresponding interval(s) on the real number line below.

(14 pts) 5) Carry out the indicated operation and write the answer in the form $a+bi$.(6 pts) (a) $(6 - 5i) - (8 - 7i)$ (8 pts) (b) $(i + 7)(2i + 3)$ 

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(8 pts) 6) Simplify, leaving your answer free of negative exponents.

$$\frac{12a^{-3}b^4c^3}{84a^2b^{-1}c^0}$$

(8 pts) 7) Simplify.

$$3x(2x + 1) - 4(x^2 + x + 5)$$

(8 pts) 8) Calculate, leaving your answer in scientific notation.

$$\frac{(530000000000)(0.000124)}{128}$$

(8 pts) 9) Express the following as an algebraic equation in x and solve for x .A car takes x hours to travel 324 miles at a speed of 72 mph. $x=$

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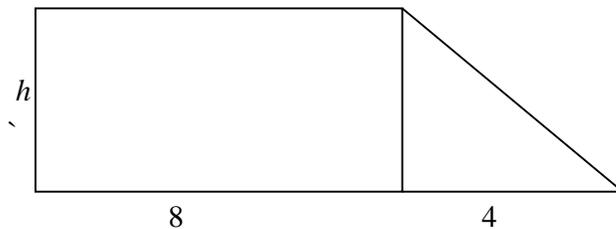
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(10 pts) 10) Find two consecutive even integers such that the sum of twice the first and three times the second is 446. (Name a variable, set up an equation, and solve.)

first even integer =

second even integer =

(10 pts) 11)) Express the total area of the figure below, which consists of a rectangle and a right triangle, in algebraic notation using the variable h . Simplify your answer.



Area =