NAME: _____

40
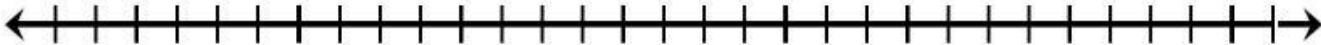
1. Order these rational numbers from least to greatest by placing them in their approximate locations on the number line. [4 marks]

$$ \textbf{A} \quad \textbf{B} \quad \textbf{C} \quad\quad \textbf{D} \quad\quad \textbf{E} \quad\quad \textbf{F} $$

$$ -\frac{7}{3}, \ 1.7, \ \frac{16}{9}, \ -0.45, \ \frac{1}{3}, \ -2.1 $$

2. A) Identify two rational numbers that are between -8.8 and -8.9, and place them on a number line. [2 marks]

    B) Fully explain, **using the definition of a rational number**, how you know that -8.8 and -8.9 are rational numbers. [2 marks]

3. A) A baker has a recipe that requires $2\frac{1}{2}$ cups of flour that makes pastries for 12 people. He is making the dish for a group of 42 people. How much flour will he require? Show your reasoning. [3 marks]

    B) A carpenter has 16.5 m of baseboard material. If he cuts off 7 pieces, each with a length of $2\frac{1}{4}$ m, how much material is left? Show your reasoning. [3 marks]

4. Evaluate each expression. Show all steps and remember to use fractions when you must! Fraction answers must be reduced to simplest form.

A) $-3.1 + 1.\overline{5} \times (-1.5) + 7.2 \div (-\frac{9}{10})$ [4 marks]

B) $\frac{1}{2} + \left(-\frac{3}{4}\right) \div \left(-\frac{1}{2}\right)^2$ [4 marks]

C) Both Amanda and Emilee evaluated the expression; $2.3 + (-11.2) \div (-0.2) - 3.7$.
    Amanda's answer was 40.8 and Emilee's answer was 54.6.

    (i)   Who is correct? Please show your work. [3 marks]

    (ii) What could be the error made by the other student? [1 mark]

5. Indicate **every** number set to which these numbers belong . [6 marks]

NUMBER	SETS CONTAINING THIS NUMBER
9	
$-1.\overline{1}$	
$\dfrac{-4}{-7}$	
$\sqrt{99}$	
π	
$\dfrac{2.3}{-3.6}$	

6. Choose **ONE** of the problems below. Find, and indicate any errors in the students work and write the correct solution in the space provided below. Please show all work. [4 marks]

a) $(-3.7) \times (-2.8 + 1.5) - 4.8 \div (-1.2)$

$= (-3.7) \times (1.3) - 4.8 \div (-1.2)$

$= -4.81 - 4.8 \div (-1.2)$

$= -9.61 \div (-1.2)$

$= 8.008\overline{3}$

b) $-\frac{3}{8} - \frac{4}{5} \times \frac{3}{10} \div \left(-\frac{4}{5}\right)$

$= -\frac{15}{40} - \frac{32}{40} \times \frac{3}{10} \div \left(-\frac{4}{5}\right)$

$= -\frac{47}{40} \times \frac{3}{10} \div \left(-\frac{4}{5}\right)$

$= -\frac{141}{400} \div \left(-\frac{4}{5}\right)$

$= -\frac{141}{400} \times \left(-\frac{5}{4}\right)$

$= \frac{(-141) \times (-5)}{400 \times 4}$

$= \frac{705}{1600}$

7. Let $a = 0.75, b = -\frac{1}{2}$, and $c = \frac{1}{8}$. Evaluate the expression and show all of your steps! [4 marks]

$$ab^2 - c$$