

Name: \_\_\_\_\_

### Problem Set – Rational coefficients

1. Write the indicated expressions.

- $\frac{1}{2}m$  inches in feet.
- The perimeter of a square with  $\frac{2}{3}g$  cm sides.
- The number of pounds in 9 oz.
- The average speed of a train that travels  $x$  miles in  $\frac{3}{4}$  hour.
- Devin is  $1\frac{1}{4}$  years younger than Eli. April is  $\frac{1}{5}$  as old as Devin. Jill is 5 years older than April. If Eli is  $E$  years old, what is Jill's age in terms of  $E$ ?

2. Rewrite the expressions by collecting like terms.

- $\frac{1}{2}k - \frac{3}{8}k$
- $\frac{2r}{5} + \frac{7r}{15}$
- $-\frac{1}{3}a - \frac{1}{2}b - \frac{3}{4} + \frac{1}{2}b - \frac{2}{3}b + \frac{5}{6}a$
- $-p + \frac{3}{5}q - \frac{1}{10}q + \frac{1}{9} - \frac{1}{9}p + 2\frac{1}{3}p$
- $\frac{5}{7}y - \frac{y}{14}$
- $\frac{3n}{8} - \frac{n}{4} + 2\frac{n}{2}$

3. Rewrite the expressions by using the distributive property and collecting like terms.

- $\frac{4}{5}(15x - 5)$
- $\frac{4}{5}\left(\frac{1}{4}c - 5\right)$
- $2\frac{4}{5}v - \frac{2}{3}\left(4v + 1\frac{1}{6}\right)$
- $8 - 4\left(\frac{1}{8}r - 3\frac{1}{2}\right)$
- $\frac{1}{7}(14x + 7) - 5$
- $\frac{1}{5}(5x - 15) - 2x$
- $\frac{2}{3}\left(h + \frac{3}{4}\right) - \frac{1}{3}\left(h + \frac{3}{4}\right)$
- $\frac{2}{3}\left(h + \frac{3}{4}\right) - \frac{2}{3}\left(h - \frac{3}{4}\right)$
- $\frac{2}{3}\left(h + \frac{3}{4}\right) + \frac{2}{3}\left(h - \frac{3}{4}\right)$
- $\frac{k}{2} - \frac{4k}{5} - 3$
- $\frac{3t+2}{7} + \frac{t-4}{14}$
- $\frac{9x-4}{10} + \frac{3x+2}{5}$