

~~Improper~~* Fractions & Mixed Numbers

*The word “improper” has received similar treatment to “reducing” (as in, reducing fractions) in recent years.

NAEP test item

$5\frac{1}{4}$ is the same as:

- (a) $5 + \frac{1}{4}$ (b) $5 - \frac{1}{4}$ (c) $5 \times \frac{1}{4}$ (d) $5 \div \frac{1}{4}$ (e) I don't know

NAEP test item

$5\frac{1}{4}$ is the same as:

(a) $5 + \frac{1}{4}$ (b) $5 - \frac{1}{4}$ (c) $5 \times \frac{1}{4}$ (d) $5 \div \frac{1}{4}$ (e) I don't know

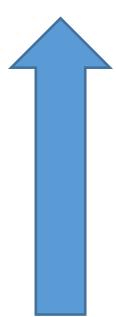
47% of 7th graders chose the correct answer.

44% of 11th graders chose the correct response.

Mixed Numbers

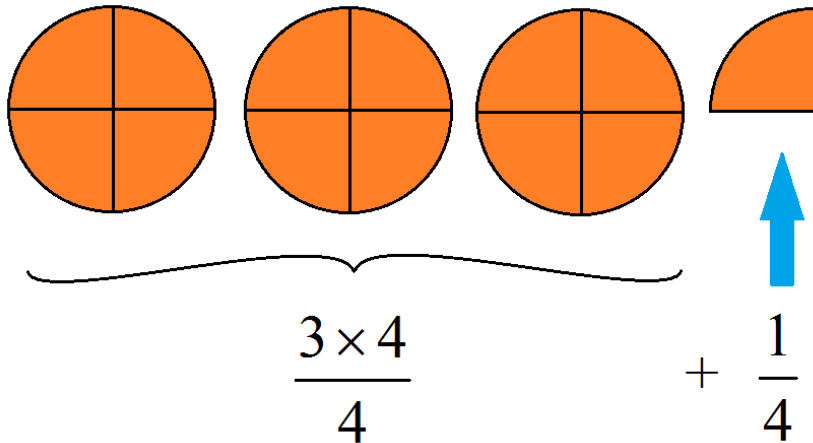
$$3\frac{1}{4} = \frac{3 \times 4 + 1}{4} = \frac{13}{4}$$

Mixed Numbers

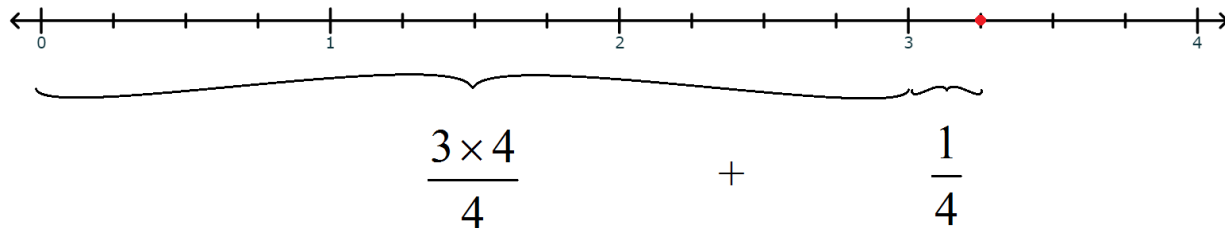
$$3\frac{1}{4} = \frac{3 \times 4 + 1}{4} = \frac{13}{4}$$


$$3\frac{1}{4} = \frac{3 \times 4 + 1}{4} = \frac{13}{4}$$

Fraction Pies:



Number Line:



Symbolic:

$$\begin{aligned} 3\frac{1}{4} &= 1 + 1 + 1 + \frac{1}{4} \\ &= \frac{4}{4} + \frac{4}{4} + \frac{4}{4} + \frac{1}{4} \\ &= \frac{3 \times 4}{4} + \frac{1}{4} \\ &= \frac{3 \times 4 + 1}{4} \\ &= \frac{13}{4} \end{aligned}$$