16. Comparing Fractions

a) Compare 2/3 and 3/4

Core Idea:**Convert** —— when numerators and denominators differ → make one side the same

Method 1: Make denominators the same

$2/3 = (2\times4)/(3\times4) = 8/12$

$3/4 = (3\times3)/(4\times3) = 9/12$

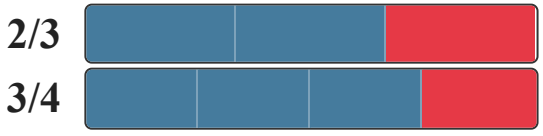
$8/12 < 9/12$, so $2/3 < 3/4$

Method 2: Make numerators the same

$2/3 = (2\times3)/(3\times3) = 6/9$

$3/4 = (3\times2)/(4\times2) = 6/8$

Same numerator, smaller denominator = larger fraction, $6/9 < 6/8$, so $2/3 < 3/4$



2/3 < 3/4

b) Compare 4/7 and 3/5

Method 1: Make denominators the same

$4/7 = (4\times\ \ )/(7\times\ \ ) =$

$3/5 = (3\times\ \ )/(5\times\ \ ) =$

Method 2: Make numerators the same

$4/7 = (4\times\ \ )/(7\times\ \ ) =$

$3/5 = (3\times\ \ )/(5\times\ \ ) =$

$4/7 \quad \square \quad 3/5$

c) Compare 5/6 and 7/8

Method 1: Make denominators the same

$5/6 = (5\times\ \ )/(6\times\ \ ) =$

$7/8 = (7\times\ \ )/(8\times\ \ ) =$

Method 2: Make numerators the same

$5/6 = (5\times\ \ )/(6\times\ \ ) =$

$7/8 = (7\times\ \ )/(8\times\ \ ) =$

$5/6 \quad \square \quad 7/8$

d) Compare 3/8 and 2/5

Method 1: Make denominators the same

$$3/8 = (3\times\ \ )/(8\times\ \ ) = \ \ $$
$$2/5 = (2\times\ \ )/(5\times\ \ ) = \ \ $$

Method 2: Make numerators the same

$$3/8 = (3\times\ \ )/(8\times\ \ ) = \ \ $$
$$2/5 = (2\times\ \ )/(5\times\ \ ) = \ \ $$

$$3/8 \ \ \ 2/5$$

e) Compare 4/9 and 5/12

Method 1: Make denominators the same

$$4/9 = (4\times\quad)/(9\times\quad) = \quad$$
$$5/12 = (5\times\quad)/(12\times\quad) = \quad$$

Method 2: Make numerators the same

$$4/9 = (4\times\quad)/(9\times\quad) = \quad$$
$$5/12 = (5\times\quad)/(12\times\quad) = \quad$$

$$4/9 \quad 5/12$$

f) Xiao Ming ate 2/5 cakes, Xiao Hong ate 3/7 cakes, who ate more?

Method 1: Make denominators the same

2/5 = (2×)/(5×) =

3/7 = (3×)/(7×) =

Method 2: Make numerators the same

2/5 = (2×)/(5×) =

3/7 = (3×)/(7×) =

2/5 ☐ 3/7