Adding and Subtracting Fractions

1. These fractions already have a common denominator. Simplify:

   (a) $\frac{1}{5}+\frac{2}{5}$ (b) $\frac{2}{7}+\frac{3}{7}$ (c) $\frac{3}{8}+\frac{1}{8}$ (d) $\frac{5}{12}+\frac{3}{12}$

2. Now try with subtracting…

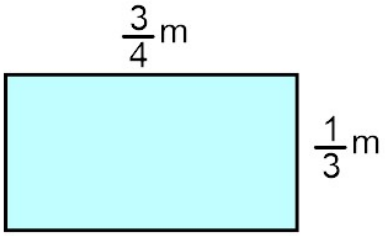
   (a) $\frac{4}{5}-\frac{2}{5}$ (b) $\frac{10}{7}-\frac{6}{7}$ (c) $\frac{13}{8}-\frac{5}{8}$ (d) $\frac{7}{12}-\frac{10}{12}$

3. Each of these will need a common denominator.

   (a) $\frac{2}{3}+\frac{1}{5}$ (b) $\frac{3}{4}+\frac{4}{7}$ (c) $\frac{3}{7}+\frac{2}{5}$ (d) $\frac{4}{9}+\frac{2}{3}$

   (e) $\frac{3}{4}-\frac{1}{7}$ (f) $\frac{4}{5}-\frac{3}{8}$ (g) $3-\frac{2}{3}$ (h) $\frac{1}{9}-\frac{1}{6}$

4. Calculate the perimeter of the rectangle shown here.



5. James, Lucy and Erin order a pizza. James eats $\frac{2}{5}$ of the pizza, Lucy eats $\frac{1}{3}$. Erin eats the rest.

   What fraction of the pizza did Erin eat?

6. A piece of wood 3m long has $\frac{4}{7}$ m cut off. How much wood is left?

7. Mixed Fractions – The same rules apply: we need a common denominator!

   (a) $3\frac{1}{4}+2\frac{3}{4}$ (b) $4\frac{1}{5}+2\frac{3}{5}$ (c) $3\frac{1}{8}+2\frac{3}{8}$ (d) $1\frac{5}{9}+2\frac{7}{9}$

   (e) $5\frac{3}{4}-2\frac{1}{4}$ (f) $7\frac{3}{5}-4\frac{1}{5}$ (g) $9\frac{7}{8}-8\frac{3}{8}$ (h) $3\frac{1}{9}-2\frac{7}{9}$

8. Now try these. You need to find a common denominator first!

(a) $5\frac{2}{3}+2\frac{3}{4}$ (b) $3\frac{1}{5}+2\frac{1}{7}$ (c) $1\frac{1}{6}+2\frac{2}{3}$ (d) $3\frac{1}{3}+2\frac{2}{9}$

(e) $3\frac{3}{4}-1$ (f) $3\frac{1}{5}-2\frac{3}{4}$ (g) $4\frac{5}{8}-\frac{3}{4}$ (h) $5\frac{6}{7}-2\frac{5}{9}$

9. A triathlon consists of three events – running, swimming and cycling. The distance of each event is shown below.

Running: $7\frac{3}{4}$ miles

Cycling: $15\frac{2}{3}$ miles

Swimming: $1\frac{2}{5}$ miles

What is the total distance of the triathlon?

10. A recipe needs $1\frac{1}{2}$ lbs of flour, $1\frac{1}{4}$ lbs of sugar and $\frac{2}{3}$ lb butter. What should the total weight of these three ingredients be?

11. James weighs $12\frac{3}{4}$ stone and Eric weighs $14\frac{1}{5}$ stone. What is the difference in their weights?

12. Simplify the following algebraic expressions.

(a) $\frac{1}{5}x+\frac{2}{5}x$ (b) $\frac{2}{3}y+\frac{1}{4}y-\frac{1}{5}y$ (c) $\frac{3}{5}a+\frac{2}{3}a-\frac{1}{6}a$

(d) $\frac{2}{3}x+\frac{1}{5}y-\frac{1}{4}x+\frac{2}{3}y$ (e) $3\frac{1}{2}x+2\frac{2}{3}x-1\frac{1}{4}x$