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Example 2:

 $\frac{1}{2} + \frac{1}{6} =$

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$$\frac{a}{m} + \frac{b}{m} = \frac{a+b}{m}$$

Example 2:

Like in our last example, we can get a common denominator by multiplying the first fraction by $\frac{6}{6}=1$ and the second by $\frac{2}{2}$ to get: $\frac{1}{2}+\frac{1}{6}=$

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Like in our last example, we can get a common denominator by multiplying the first fraction by $\frac{6}{6} = 1$ and the second by $\frac{2}{2}$ to get: $\frac{1}{2} + \frac{1}{6} = \frac{6}{6} \cdot \frac{1}{2} + \frac{1}{6} \cdot \frac{2}{2}$

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Like in our last example, we can get a common denominator by multiplying the first fraction by $\frac{6}{6}=1$ and the second by $\frac{2}{2}$ to get:

$$\frac{1}{2} + \frac{1}{6} = \frac{6}{6} \cdot \frac{1}{2} + \frac{1}{6} \cdot \frac{2}{2} = \frac{6 \cdot 1}{6 \cdot 2} + \frac{1 \cdot 2}{6 \cdot 2}$$

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Like in our last example, we can get a common denominator by multiplying the first fraction by $\frac{6}{6} = 1$ and the second by $\frac{2}{2}$ to get:

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Like in our last example, we can get a common denominator by multiplying the first fraction by $\frac{6}{6} = 1$ and the second by $\frac{2}{2}$ to get: $\frac{1}{2} + \frac{1}{6} = \frac{6}{6} \cdot \frac{1}{2} + \frac{1}{6} \cdot \frac{2}{2} = \frac{6 \cdot 1}{6 \cdot 2} + \frac{1 \cdot 2}{6 \cdot 2} = \frac{6}{12} + \frac{2}{12} = \frac{8}{12}$

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Like in our last example, we can get a common denominator by multiplying the first fraction by $\frac{6}{6} = 1$ and the second by $\frac{2}{2}$ to get: $\frac{1}{2} + \frac{1}{6} = \frac{6}{6} \cdot \frac{1}{2} + \frac{1}{6} \cdot \frac{2}{2} = \frac{6 \cdot 1}{6 \cdot 2} + \frac{1 \cdot 2}{6 \cdot 2} = \frac{6}{12} + \frac{2}{12} = \frac{8}{12} = \frac{2 \cdot 4}{3 \cdot 4}$

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$$\frac{a}{m} + \frac{b}{m} = \frac{a+b}{m}$$

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Like in our last example, we can get a common denominator by multiplying the first fraction by $\frac{6}{6} = 1$ and the second by $\frac{2}{2}$ to get: $\frac{1}{2} + \frac{1}{6} = \frac{6}{6} \cdot \frac{1}{2} + \frac{1}{6} \cdot \frac{2}{2} = \frac{6 \cdot 1}{6 \cdot 2} + \frac{1 \cdot 2}{6 \cdot 2} = \frac{6}{12} + \frac{2}{12} = \frac{8}{12} = \frac{2 \cdot \cancel{4}}{3 \cdot \cancel{4}} = \frac{2}{3}$ But we could have been more precise with our common denominator. We can factor 6 to re-write our fraction as:

$$\frac{1}{2} + \frac{1}{6} = \frac{1}{2} + \frac{1}{3 \cdot 2}$$

Now we can see that the first denominator is just missing the factor 3

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Like in our last example, we can get a common denominator by multiplying the first fraction by $\frac{6}{6} = 1$ and the second by $\frac{2}{2}$ to get:

 $\frac{1}{2} + \frac{1}{6} = \frac{6}{6} \cdot \frac{1}{2} + \frac{1}{6} \cdot \frac{2}{2} = \frac{6 \cdot 1}{6 \cdot 2} + \frac{1 \cdot 2}{6 \cdot 2} = \frac{6}{12} + \frac{2}{12} = \frac{8}{12} = \frac{2 \cdot \cancel{4}}{3 \cdot \cancel{4}} = \frac{2}{3}$ But we could have been more precise with our common denominator. We can factor 6 to re-write our fraction as: $\frac{1}{2} + \frac{1}{6} = \frac{1}{2} + \frac{1}{3 \cdot 2}$

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 instead of $\frac{6}{6}$

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Like in our last example, we can get a common denominator by multiplying the first fraction by $\frac{6}{6} = 1$ and the second by $\frac{2}{2}$ to get:

 $\frac{1}{2} + \frac{1}{6} = \frac{6}{6} \cdot \frac{1}{2} + \frac{1}{6} \cdot \frac{2}{2} = \frac{6 \cdot 1}{6 \cdot 2} + \frac{1 \cdot 2}{6 \cdot 2} = \frac{6}{12} + \frac{2}{12} = \frac{8}{12} = \frac{2 \cdot \cancel{4}}{3 \cdot \cancel{4}} = \frac{2}{3}$ But we could have been more precise with our common denominator. We can factor 6 to re-write our fraction as: $\frac{1}{2} + \frac{1}{2} = \frac{3}{2} \cdot \frac{1}{2} + \frac{1}{2}$

$$\frac{1}{2} + \frac{1}{6} - \frac{1}{3} \cdot \frac{1}{2} + \frac{1}{3 \cdot 2}$$

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Like in our last example, we can get a common denominator by multiplying the first fraction by $\frac{6}{6} = 1$ and the second by $\frac{2}{2}$ to get:

 $\frac{1}{2} + \frac{1}{6} = \frac{6}{6} \cdot \frac{1}{2} + \frac{1}{6} \cdot \frac{2}{2} = \frac{6 \cdot 1}{6 \cdot 2} + \frac{1 \cdot 2}{6 \cdot 2} = \frac{6}{12} + \frac{2}{12} = \frac{8}{12} = \frac{2 \cdot \cancel{4}}{3 \cdot \cancel{4}} = \frac{2}{3}$ But we could have been more precise with our common denominator. We can factor 6 to re-write our fraction as: $1 \quad 1 \quad 3 \quad 1 \quad 1$

$$\overline{2} + \overline{6} = \overline{3} \cdot \overline{2} + \overline{3 \cdot 2}$$

Now we can see that the first denominator is just missing the factor 3 So, we just need to multiply by $\frac{3}{3}$ instead of $\frac{6}{6}$ And we do not need to multiply the second fraction by anything

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 $\frac{1}{2} + \frac{1}{6} = \frac{3}{3} \cdot \frac{1}{2} + \frac{1}{3 \cdot 2} = \frac{3}{6} + \frac{1}{6} = \frac{4}{6} = \frac{2 \cdot 2}{3 \cdot 2} = \frac{2}{3}$ Now we can see that the first denominator is just missing the factor 3 So, we just need to multiply by $\frac{3}{3}$ instead of $\frac{6}{6}$ And we do not need to multiply the second fraction by anything So, it is less work in the long run to find the factors of the denominator and only multiply by the missing factors in each fraction!