Pre-algebra
Skill-Builder # F – 4
Adding or Subtracting Like Signed Fractions

Like fractions are fractions with the same denominators. To add or subtract like fractions, simply add or subtract the numerators and copy the denominator. The same rules for adding or subtracting integers apply. Thus, for a nonzero integer b, we have

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

$$\frac{a}{b}-\frac{c}{b}=\frac{a-c}{b}$$

<u>Examples</u> Add and/or subtract and simplify the final answer.

1) $\dfrac{5}{8}+\dfrac{1}{8}$

Solution:

$\dfrac{5}{8}+\dfrac{1}{8}$

$=\dfrac{6}{8}$ Add the numerators.

$=\dfrac{\cancel{2}\cdot 3}{\cancel{2}\cdot 4}$ Factor 6 and 8.

$=\dfrac{3}{4}$ Cancel 2 from numerator and denominator.

2) $-\dfrac{13}{20}+\dfrac{7}{20}$

Solution:

$-\dfrac{13}{20}+\dfrac{7}{20}$

$=\dfrac{-13+7}{20}$ Add the numerators.

$=\dfrac{-6}{20}$ Subtract 13 – 7 and choose the sign of 13.

$=-\dfrac{\cancel{2}\cdot 3}{\cancel{2}\cdot 10}$ Factor 6 and 20.

$=-\dfrac{3}{10}$ Cancel 2.

3) $-\dfrac{5}{21}-\left(-\dfrac{2}{21}\right)$

Solution:

$-\dfrac{5}{21}-\left(-\dfrac{2}{21}\right)$

$=-\dfrac{5}{21}+\dfrac{2}{21}$ Add the opposite of $-\dfrac{2}{21}$.

$=\dfrac{-5+2}{21}$ Add the numerators.

$=\dfrac{-3}{21}$ Subtract 5 – 2 and pick the sign of 5.

$=-\dfrac{\cancel{3}\cdot 1}{\cancel{3}\cdot 7}$ Factor 21.

$=-\dfrac{1}{7}$ Cancel 3.

4) $-\dfrac{1}{18}-\dfrac{5}{18}-\left(-\dfrac{7}{18}\right)$

Solution:

$-\dfrac{1}{18}-\dfrac{5}{18}-\left(-\dfrac{7}{18}\right)$

$=-\dfrac{1}{18}-\dfrac{5}{18}+\dfrac{7}{18}$ Add the opposite of $-\dfrac{7}{18}$.

$=\dfrac{-1-5+7}{18}$ Add/subtract the numerators.

$=\dfrac{1}{18}$

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Add and/or subtract.

1) $\dfrac{9}{20} + \dfrac{7}{20}$

2) $-\dfrac{8}{15} + \dfrac{2}{15}$

3) $-\dfrac{7}{24} - \dfrac{8}{24}$

4) $\dfrac{11}{25} - \left(-\dfrac{4}{25}\right)$

5) $\dfrac{4}{15} - \dfrac{7}{15} - \dfrac{2}{15}$

6) $-\dfrac{7}{39} - \left(-\dfrac{5}{39}\right) - \dfrac{11}{39}$

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Answer Key:

1) $\dfrac{4}{5}$

2) $-\dfrac{2}{5}$

3) $-\dfrac{5}{8}$

4) $\dfrac{3}{5}$

5) $-\dfrac{1}{3}$

6) $-\dfrac{1}{3}$

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