Mr. Tu's Excellent Examples

Module 6
Jazz Musician

Applying Lesson 6.1

1. Professor Briggs is totaling the notes in a measure to make sure that he has the equivalent of four quarter notes (a whole). The measure has one quarter note, one half note and two eighth notes. He has converted each note to an equivalent fraction with a denominator of eighths. He changed the quarter note to $\frac{2}{8}$ and the half note to $\frac{4}{8}$. Does he have a whole?

$$\frac{2}{8} + \frac{4}{8} + \frac{1}{8} + \frac{1}{8} = \frac{8}{8} = 1$$

Yes, the 4 notes do equal a whole.

2. Professor Briggs is reviewing a composition by one of his music students. He sees that the student has written five quarter notes in a single measure. The measure should only contain one whole. How many quarter notes have to be eliminated so there are not excessive notes in the measure? Write and solve a subtraction problem to answer the question.

$$\frac{5}{4} - 1 = \frac{5}{4} - \frac{4}{4} = \frac{1}{4}$$

There is one extra quarter note in the measure.

Applying Lesson 6.2

1. A student has composed a measure with one quarter note, three eighth notes, and two sixteenth notes. The composition is being written in $\frac{3}{4}$ time, which means that each measure should contain $\frac{3}{4}$ of a whole. Has the student composed a full measure?

$$\frac{1}{4} + \frac{3}{8} + \frac{2}{16} = \frac{4}{16} + \frac{6}{16} + \frac{2}{16} = \frac{12}{16}$$

$$\frac{12}{16} = \frac{3}{4}$$

Yes, the student has composed a full measure in $\frac{3}{4}$ time.

2. Professor Briggs is reviewing another student's work. The student composed a measure in $\frac{4}{4}$ time using four eighth notes, one quarter note, and three sixteenth notes. Is the student's measure composed correctly?

$$\frac{4}{8} + \frac{1}{4} + \frac{3}{16} = \frac{8}{16} + \frac{4}{16} + \frac{3}{16} = \frac{15}{16}$$

$$\frac{15}{16} \neq \frac{4}{4}$$

No, the notes in this measure are not composed correctly.

Applying Lesson 6.3

1. Professor Briggs is assisting a student on a composition written in $\frac{3}{4}$ time. The student has written seven sixteenth notes. How many more sixteenth notes can the student have in this measure?

$$\frac{3}{4} - \frac{7}{16} = \frac{12}{16} - \frac{7}{16} = \frac{5}{16}$$

The student can have five more sixteenth notes in this measure.

1. Professor Briggs is revising his composition. He decides to replace a half note in a measure with three eighth notes. Has he completely replaced the half note? If not, what must he add to the measure to make it complete?

$$\frac{1}{2} - \frac{3}{8} = \frac{4}{8} - \frac{3}{8} = \frac{1}{8}$$

He has not completely replaced the half note.
He must add the equivalent of an eighth note.

Applying Lesson 6.4

1. Professor Briggs requires his students to practice on their instruments nine hours per week. They have to log their time in the studio. One student practiced $2\frac{1}{2}$ hours one day and $3\frac{3}{4}$ hours on another day. How many hours total did the student practice?

$$2\frac{1}{2} + 3\frac{3}{4} = 2\frac{2}{4} + 3\frac{3}{4} = 5\frac{5}{4} = 6\frac{1}{4}$$

The student practiced $6\frac{1}{4}$ hours.

2. Professor Briggs told each member of the jazz ensemble they must practice $5\frac{1}{2}$ hours before the concert on Friday night. One student had practiced only $3\frac{3}{4}$ hours by Thursday. How many more hours is the student required to practice prior to the concert?

$$5\frac{1}{2} - 3\frac{3}{4} = 5\frac{2}{4} - 3\frac{3}{4} = 4\frac{6}{4} - 3\frac{3}{4} = 1\frac{3}{4}$$

The student needs to practice another $1\frac{3}{4}$ hours.

Applying Lesson 6.5

1. A musician is reading sheet music. The musician sees a dot following a quarter note. This lets the musician know to hold the note for $1\frac{1}{2}$ times the length of a quarter note. How long should the note be held?

$$1\frac{1}{2} \times \frac{1}{4} = \frac{3}{2} \times \frac{1}{4} = \frac{3}{8}$$

The note should be held for $\frac{3}{8}$ of a whole note.

2. Half of Professor Briggs' students play woodwind instruments. One fourth of the woodwind players play the saxophone. What fraction of Professor Briggs' students play the saxophone.

$$\frac{1}{2} \times \frac{1}{4} = \frac{1}{8}$$

One eighth of the woodwind players play the saxophone.

Applying Lesson 6.6

1. Professor Briggs is listening to a piece composed by one of his students. He thinks that the piece drags in a few places so he suggests that the student divide one of the half notes into four notes of equal length. What type of note will each of these four notes be?

$$\frac{1}{2} \div 4 = \frac{1}{2} \div \frac{4}{1} = \frac{1}{2} \times \frac{1}{4} = \frac{1}{8}$$

Each note will be an eighth note.

2. Professor Briggs is scheduling a recital for his students. He wants to equally divide the $2\frac{1}{2}$ hour recital between his six students. What fraction of an hour will each student have?

$$2\frac{1}{2} \div 6 = \frac{5}{2} \times \frac{1}{6} = \frac{5}{12}$$