Quiz 4

Key

This is a two-stage quiz. During the first stage, use your knowledge & calculator to take this quiz. You have 15 min. In the second stage, you are now welcome to use your books, notes, and students in the class to retake the same quiz. You have 15 min. to write one solution (with everyone's name on it!!!) to be turned in for the group.

Show *all* your work. Reasonable supporting work must be shown for any partial credit.

1. [3] Let a be a non-zero integer. The following work is wrong. Detect the error, try to detect the reason for the error, and then complete the simplification correctly:

Too hard why?

$$\frac{6a+8}{2a} = \frac{3a+8}{a}$$

The entire numerator needs the 2 factored out (+1)

(+1) Correct work $\frac{6a+8}{2a} = \frac{2 \cdot (3a+4)}{2 \times a} = \frac{3a+4}{a}$

2. Consider the numbers 126 and 180.

(a) [2] Find GCF(126, 180).

(+.5) $= 3 \times 3 \times 2 = 18$

(b) [2] Find LCM(126, 180).

(+.5) $= \underbrace{3 \times 3 \times 2 \times 7}_{\text{common for } 126} \times \underbrace{2 \times 5}_{\text{for } 180} = 1260$

note $1260 = 126 \cdot 10$
$= 180 \cdot 7$

factor trees (+2)

126 → 63, 2 → ③, 21 → ③, 7

180 → 9, 20 → ③ ③, 10 → ② → ②, 5
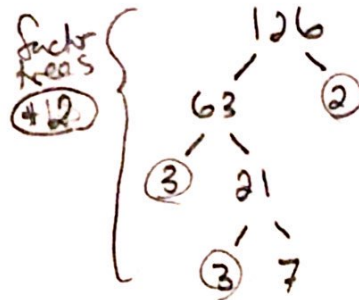
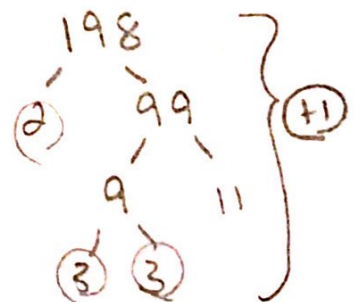**3.** [3] A school principal plans to form teams from 126 third-graders, 180 fourth-graders, and 198 fifth-graders so that there is the same number of students from each grade level on each team. Note that the number of students could vary by grade level, for example, each team could have 9 third-graders and 18 fourth-graders. If all students participate, what is the largest possible number of teams? Show your work.

(+1) We need the # of teams to divide 126, and 180, and 198 and be as large as possible.
We are looking for the GCF(126, 180, 198). ⌣

(+1) We can use the factor trees from #2 to grab the prime factors in common.
$3 \times 3 \times 2 \Rightarrow$ **18 teams**

198 → 2, 99 → ②, 9, 11 → ③ ③ (+1)

note there would be: 7 third graders (7·18 = 126)
10 fourth graders (10·18 = 180)
and 11 fifth graders (11·18 = 198)

(margin notes, left side)
§4.2 #1a
(+.5) start
(+.5) notation
§4.2 #14,16
Extra Practice §4.2 #23

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