

Name: _____

Part 1. Simplify each fraction.

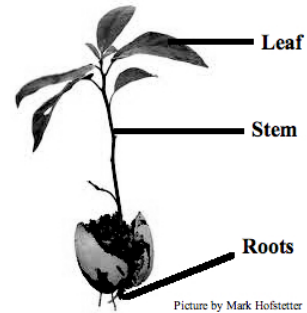
- 1) $\frac{5}{10} =$ _____ 2) $\frac{3}{18} =$ _____ 3) $\frac{4}{22} =$ _____
4) $\frac{10}{24} =$ _____ 5) $\frac{9}{6} =$ _____

Part 2. Tell whether each pair of fractions is proportional.

- 6) $\frac{5}{10}$ and $\frac{1}{2}$ _____ 7) $\frac{2}{3}$ and $\frac{5}{15}$ _____ 8) $\frac{4}{16}$ and $\frac{5}{20} =$ _____
9) $\frac{6}{4}$ and $\frac{9}{6}$ _____ 10) $\frac{15}{3}$ and $\frac{2}{10}$ _____

Part 3. Proportional fractions in biology. Scientists measured the stem, leaf, and root mass of three trees. Your job is to determine whether different relationships are proportional.

Tree 1- Root mass: 0.1 g; Stem mass: 0.35 g, Leaf mass: 0.12 g
Tree 2- Root mass: 20 g; Stem mass: 70 g, Leaf mass: 8 g
Tree 3- Root mass: 45 g; Stem mass: 157.5 g, Leaf mass: 14 g



- 11) Are root mass and stem mass proportional in these plants?
- 12) Are root mass and leaf mass proportional in these plants?
- 13) Are stem mass and leaf mass proportional in these plants?
- 14) Does a large plant have more leaves or fewer leaves, compared to its stem mass?
- 15) What do you think that your answers in questions (11)-(14) tell you about the biology of plants?

ANSWER KEY

Part 1. Simplify each fraction.

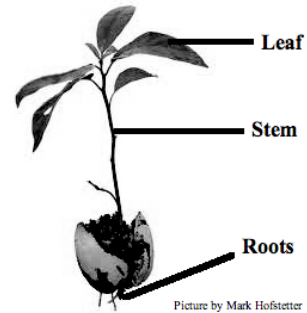
- 1) $\frac{5}{10} = \underline{1/2}$ 2) $\frac{3}{18} = \underline{1/6}$ 3) $\frac{4}{22} = \underline{2/11}$
4) $\frac{10}{24} = \underline{5/12}$ 5) $\frac{9}{6} = \underline{3/2 \text{ or } 1 \frac{1}{2}}$

Part 2. Tell whether each pair of fractions is proportional.

- 6) $\frac{5}{10}$ and $\frac{1}{2}$ yes 7) $\frac{2}{3}$ and $\frac{5}{15}$ no 8) $\frac{4}{16}$ and $\frac{5}{20}$ yes
9) $\frac{6}{4}$ and $\frac{9}{6}$ yes 10) $\frac{15}{3}$ and $\frac{2}{10}$ no

Part 3. Proportional fractions in biology. Scientists measured the stem, leaf, and root mass of three trees. Your job is to determine whether different relationships are proportional.

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11) Are root mass and stem mass proportional in these plants?

yes

12) Are root mass and leaf mass proportional in these plants?

no

13) Are stem mass and leaf mass proportional in these plants?

no

14) Does a large plant have more leaves or fewer leaves, compared to its stem mass?

fewer leaves

15) What do you think that your answers in questions (11)-(14) tell you about the biology of plants?

Large plants use less energy per gram of mass, and therefore need fewer leaves for photosynthesis.