

1. Classify each ratio statement as part-to-part or part-to-whole.
 - (a) Out of every 8 SRU students, 3 live in Allegheny County.
 - (b) For every 9 games the team wins, there are 2 games they lose.
 - (c) $\frac{2}{5}$ of the pets in the shelter are puppies.
 - (d) The ratio of pepperoni pizzas to sausage pizzas is 5 to 2.
 - (e) The ratio of tall to short saplings in the greenhouse is 2 to 11.
 - (f) The ratio of blue M&Ms to all M&Ms is 3 to 10.
 - (g) There are 6 green apples in every basket of 20 apples.
 - (h) There are 7 umbrellas per classroom in the school.
2. Translate each ratio below to a complete, verbal sentence. Also identify as part-to-part or part-to-whole.
 - (a) A ratio of 1:3 for boys to girls
 - (b) A ratio of 7:9 for dogs to cats
 - (c) A ratio of 4:5 for female students to students
 - (d) A ratio of 6:1 for people tested for a disease to those who were positive for it
3. Express the requested ratio using colon notation, then tell whether it is a part-to-part or part-to-whole ratio.
 - (a) If the ratio of men to women in my class is 8:7, what is the ratio of students to men?
 - (b) Four out of five dentists recommend a certain toothpaste. What is the ratio of recommenders to non-recommenders?
 - (c) A state legislature currently has a Democrat-Republican ratio of 10:7. What is the ratio of Republicans to representatives?
 - (d) If 3 out of every 10 people smoke, what is the ratio of smokers to non-smokers?
 - (e) The incidence of a certain disease is 1 in every thousand births. What is the ratio of those who don't have the disease to those who do?
 - (f) A lemonade recipe calls for $1\frac{1}{2}$ cups of sugar for every quarter of a cup of lemon juice. What is the ratio of lemon to sugar?
4.
 - (a) A state legislature currently has a Democrat-Republican ratio of 10:7. What fraction are Republicans?
 - (b) A dough recipe calls for $1\frac{1}{2}$ cups of flour for every cup of sugar. What fraction of these dry ingredients are flour?
5. Use each part-to-part ratio to create a related part-to-whole ratio, and vice versa.
 - (a) There are 3 cars for every truck.
 - (b) There are 7 green pens for every 9 non-green pens.
 - (c) 4 out of every 5 tomatoes are ripe.
 - (d) 5 in every 9 books are fiction.

1. Classify each ratio statement as part-to-part or part-to-whole.
 - (a) part-to-whole
 - (b) part-to-part
 - (c) part-to-whole
 - (d) part-to-part
 - (e) part-to-part
 - (f) part-to-whole
 - (g) part-to-whole
 - (h) part-to-part
2.
 - (a) There are 3 girls for every boy. (part-to-part)
 - (b) There are 7 dogs for every 9 cats. (part-to-part)
 - (c) 4 out of every 5 students are female. (part-to-whole)
 - (d) 1 out of every 6 people tested has the disease. (part-to-whole)
3.
 - (a) The ratio is 15:8, part-to-whole.
 - (b) The ratio is 4:1, part-to-part.
 - (c) The ratio is 7:17, part-to-whole.
 - (d) The ratio is 3:7, part-to-part.
 - (e) The ratio is 999:1, part-to-part.
 - (f) The ratio is 1:6, part-to-part.
4.
 - (a) $\frac{7}{15}$
 - (b) $\frac{3}{5}$
5.
 - (a) 3 out of every 4 vehicles are cars. OR... 1 out of every 4 vehicles is a truck.
 - (b) 7 out of every 16 pens are green. OR...9 out of every 16 pens are not green.
 - (c) There are four ripe tomatoes for every (one) unripe tomato.
 - (d) There are 5 fiction books for every 4 non-fiction books.