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2. A tape diagram has 2 equal boxes for cats and 7 equal boxes for dogs. Each box represents 3 animals. How many cats and dogs are there? Write the ratio cats:dogs.

3. A tape diagram shows 6 equal parts for apples and 9 equal parts for oranges. Each part represents 2 pieces of fruit. Write the ratio apples:oranges.

4. A tape diagram shows 4 boxes for pencils and 6 boxes for pens. Each box is 5 items. What is the ratio pencils:pens?

5. A tape diagram has 1 box for green shirts and 4 boxes for blue shirts. Each box equals 8 shirts. How many green shirts and blue shirts? Write the ratio green:blue.

6. A tape diagram showing two groups: 7 boxes of snacks (each box = 2 snacks) and 3 boxes of drinks (each box = 2 drinks). Write the ratio snacks:drinks in simplest form.

7. A tape diagram shows 5 boxes for red flags and 5 boxes for yellow flags. If each box represents 6 flags, what is the ratio red:yellow?

8. A tape diagram shows 10 boxes for small boxes and 2 boxes for large boxes; each box represents 1 item. Write the ratio small:large and reduce it.

9. A tape diagram shows 8 equal parts for pencils and 4 equal parts for erasers. Each part is 5 items. How many pencils and erasers? Write the ratio pencils:erasers and simplify.

10. A tape diagram shows 3 boxes for team A and 9 boxes for team B. Each box is 7 students. What is the ratio A:B? Then write it in simplest form.

Ratios with tape diagrams (part:whole) (11-20)

11. A tape diagram has 2 boxes shaded (representing boys) and 6 boxes unshaded (girls). Each box = 3 students. What is the ratio boys:whole class?

12. A tape diagram shows 4 shaded boxes for red beads and 12 total boxes. Each box = 1 bead. What is the ratio red:whole?

13. A tape diagram shows 5 boxes for blue socks and 15 total boxes for all socks. What fraction and ratio (blue:whole) does this represent? Simplify both.

14. In a tape diagram of 10 equal parts, 3 parts are shaded for students who brought lunch. What is the ratio broughtLunch:wholeClass?

15. A tape diagram shows 7 equal boxes shaded for people who prefer cats out of 14 equal boxes total. Write the ratio cats:whole and simplify.

16. A tape diagram shows 6 boxes representing children eating apples and 9 boxes representing children eating other fruits. If total boxes are 15, what is the ratio apples:whole?

17. A tape diagram has 1 shaded box (plays piano) and 4 unshaded out of 5 equal boxes total. Each box = 2 students. What is the ratio playsPiano:whole?

18. A tape diagram shows 8 shaded parts out of 20 total parts for students who ride the bus. Write the ratio rideBus:whole and reduce it.

19. A tape diagram of 12 equal parts shows 3 shaded for kids who read comic books. What is the ratio comics:whole? Also give it as a fraction in simplest form.

20. A tape diagram shows 2 shaded boxes for people who recycle and 8 unshaded boxes (10 total). Each box = 4 people. What is the ratio recycle:whole?

Equivalent ratio word problems (21-32)

21. A recipe needs 2 cups of flour for every 3 cups of sugar. If you use 6 cups of flour, how much sugar is needed to keep the same ratio?

22. A map scale shows 1 cm for every 5 km. On the map, two cities are 3 cm apart. How many kilometers are they apart? If a third city is 9 cm away, how many km?

23. Sam paints fences at a rate of 4 fences in 3 days. How many days for 12 fences at the same rate?

24. A class has a ratio of 5 girls to 8 boys. If there are 40 boys, how many girls are there?

25. A fruit punch recipe uses 3 liters of juice for every 7 liters of water. If you make 21 liters of water, how much juice do you need?

26. A car travels 150 miles using 5 gallons of gas. How many miles could it travel on 12 gallons at the same rate?

27. A bike's tires use air at a ratio 2 PSI per 1 extra kg of weight. If a rider carries 8 kg extra, how many PSI extra is needed? (Keep as multiplication of ratio.)

28. A poster uses a color mix of 4 parts blue to 6 parts yellow. If the artist uses 10 parts yellow, how many parts blue should they use to keep the same mix?

29. A bakery bakes cookies in a ratio 7 chocolate to 5 sugar. If they baked 70 chocolate cookies, how many sugar cookies did they bake?

30. A scale model uses 1:50 ratio. If a real bridge is 300 meters long, how long should the model be in meters?

31. The ratio of red pens to green pens is 9:4. If there are 36 red pens, how many green pens are there?

32. A machine mixes paint at a ratio 2 parts red : 3 parts white. If you want 25 parts total, how many red and white parts should you use if the ratio is kept and parts must be whole numbers?

Simplify a ratio from a tape diagram (33-40)

33. A tape diagram shows 12 boxes shaded for cats and 18 boxes for dogs. Write the ratio cats:dogs and simplify.

34. A tape diagram shows 15 parts for blue tiles and 5 parts for green tiles. What is the simplified ratio blue:green?

35. A tape diagram shows 14 apples and 21 oranges. Simplify the ratio apples:oranges.

36. A tape diagram shows 20 red candies and 30 yellow candies. Simplify the ratio red:yellow.

37. A tape diagram shows 16 small bricks and 24 big bricks. Write and simplify small:big.

38. A tape diagram shows 27 boxes for chairs and 9 boxes for tables. Simplify chairs:tables.

39. A tape diagram shows 18 students who like math and 12 who like science. Simplify math:science.

40. A tape diagram shows 25 blue marbles and 15 white marbles. Simplify blue:white.

Ratios and double number lines (41-50)

41. A double number line links 2 pencils to $1.20 and 10 pencils to how much? Fill missing value.

42. On a double number line, 3 cookies cost $1.50. How much do 12 cookies cost?

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43. A double number line shows 5 km correspond to 20 minutes. How many minutes for 15 km at the same rate?

44. A double number line shows 4 packs of stickers cost $6. How much do 10 packs cost?

45. A double number line links 7 books to 56 pages read per book total? (Interpret as: 7 books x 120 pages each?) – (rewrite question to be clear) – Replace with: A double number line shows that 2 boxes hold 12 toy cars. How many toy cars do 9 boxes hold?

46. A double number line shows 1 hour corresponds to 8 miles at a walking pace. How far in miles in 3.5 hours?

47. The double number line shows 6 shirts weigh 9 pounds. How many pounds do 15 shirts weigh?

48. A double number line: 250 ml of paint covers 4 square meters. How much paint needed to cover 10 square meters?

49. On a double number line, 8 students can plant 32 trees in one day. How many trees can 5 students plant in one day at same rate?

50. A double number line shows 9 notebooks cost $13.50. How much do 4 notebooks cost?