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B Practising

3. Decide whether the decimal equivalent of each fraction terminates or repeats.

a) $\frac{3}{4}$ **b)** $\frac{5}{9}$ **c)** $\frac{9}{14}$ **d)** $\frac{19}{20}$

4. Write each decimal as a fraction.

a) 0.1625 **b)** 0.8550

5. If possible, write each fraction as a terminating decimal.

a) $\frac{14}{25}$ **c)** $\frac{1}{16}$ **e)** $\frac{19}{20}$

b) $\frac{5}{8}$ **d)** $\frac{4}{5}$ **f)** $\frac{22}{32}$

6. If possible, write each fraction as a repeating decimal.

a) $\frac{1}{6}$ **c)** $\frac{7}{11}$ **e)** $\frac{48}{49}$

b) $\frac{8}{9}$ **d)** $\frac{7}{15}$ **f)** $\frac{57}{111}$

7. Sort the fractions based on whether they are equivalent to a terminating decimal or a repeating decimal.

a) $\frac{4}{9}$ **c)** $\frac{5}{6}$ **e)** $\frac{5}{18}$

b) $\frac{3}{5}$ **d)** $\frac{15}{16}$ **f)** $\frac{19}{32}$

8. Order the fractions in question 7 from least to greatest.

9. **a)** Describe the following fraction pattern: $\frac{8}{9}, \frac{8}{99}, \frac{8}{999}, \ldots$. Write the next three fractions in the pattern.

b) Rewrite the pattern using decimal equivalents for each of the six fractions.

c) Describe the decimal pattern. Is the decimal pattern easier or harder to describe than the fraction pattern?

10. Express each fraction as a repeating decimal.

a) $\frac{1}{7}$ **b)** $\frac{2}{7}$ **c)** $\frac{3}{7}$

11. **a)** Describe a pattern in your answers for the previous question.

b) Predict the decimal equivalents of $\frac{4}{7}$ and $\frac{5}{7}$.

12. Replace each ▫ with >, <, or =.

a) $0.2 \square 0.\overline{2}$

b) $\frac{45}{99} \square 0.\overline{45}$

c) $0.\overline{82} \square \frac{4}{5}$

d) $\frac{6}{11} \square \frac{7}{13}$

e) $0.357\,357\,357\,\ldots \square 0.\overline{375}$

f) $\frac{2}{3} \square 0.633$

13. Order the numbers from least to greatest.

a) $\frac{1}{8}, \frac{5}{7}, 0.35, 0.\overline{39}, \frac{9}{10}$

b) $0.56, 0.5\overline{6}, 0.\overline{56}, \frac{5}{9}, \frac{27}{50}$

14. Predict the decimal equivalent of each fraction, using the fact that $\frac{1}{3} = 0.333....$

a) $\frac{2}{3}$ **b)** $\frac{1}{9}$ **c)** $\frac{1}{30}$ **d)** $\frac{4}{3}$

15. Calculate the decimal equivalent of each fraction.

a) $\frac{1}{12}$ **b)** $\frac{1}{28}$ **c)** $\frac{1}{44}$ **d)** $\frac{1}{52}$

16. Look at your answers for the previous question.

a) How are the decimal equivalents alike?

b) What do the denominators have in common?

17. The cost of a new toy is $1 after taxes. You and two friends want to split the cost evenly.

a) Express each person's share as a fraction.

b) Express the fraction as a decimal.

c) How much should each of you pay? Explain your decision.

d) Create a similar problem with a different fraction and solve it.

18. How can you tell, without calculating, that the decimal equivalent of $\frac{1}{33}$ repeats?