Exercise 19

Dividing Mixed Numbers by Fractions and Whole Numbers

Divide a mixed number by a fraction by first rewriting the mixed number as an improper fraction. Then invert the divisor. Divide a mixed number by a whole number the same way.

Divide. $6\frac{3}{4} \div \frac{3}{8}$

Rewrite the mixed number as an improper fraction. $\frac{27}{4} \div \frac{3}{8}$

Invert the divisor and change the operation sign. $\frac{27}{4} \times \frac{8}{3}$

Cancel and multiply. $\frac{\overset{9}{\cancel{27}}}{\underset{1}{\cancel{4}}} \times \frac{\overset{2}{\cancel{8}}}{\underset{1}{\cancel{3}}} = \frac{18}{1} = 18$

Divide. Reduce your answer to lowest terms, if possible.

1. $2\frac{1}{4} \div \frac{1}{2} =$

2. $6\frac{1}{8} \div \frac{3}{4} =$

3. $4\frac{1}{3} \div \frac{1}{6} =$

4. $7\frac{1}{2} \div \frac{1}{8} =$

5. $1\frac{1}{4} \div \frac{3}{8} =$

6. $2\frac{2}{3} \div \frac{4}{10} =$

7. $3\frac{1}{3} \div \frac{4}{8} =$

8. $12\frac{1}{4} \div \frac{7}{8} =$

9. $10\frac{3}{9} \div \frac{1}{4} =$

10. $7\frac{1}{6} \div 4 =$

11. $2\frac{2}{3} \div 6 =$

12. $1\frac{7}{8} \div 2 =$

13. $4\frac{9}{12} \div 5 =$

14. $6\frac{1}{9} \div 7 =$

15. $3\frac{4}{5} \div 5 =$

16. $4\frac{6}{8} \div 10 =$

17. $7\frac{2}{9} \div 14 =$

18. $10\frac{3}{9} \div 7 =$

Solve.

19. A commuter train travels at 85 miles per hour. The train travels $191\frac{1}{4}$ miles from New York City to Philadelphia. Use the formula shown to figure how long it will take for the train to travel from New York City to Philadelphia.

_____ miles ÷ _____ miles per hour = _____ hours

Directions: Choose the one best answer to each item. Circle the number of the correct answer.

20. The hem on Helen's skirt is $3\frac{1}{2}$ feet around. She wants to put rhinestone studs along the hem at $\frac{1}{4}$-foot intervals. How many studs will Helen need?

(1) 10 studs
(2) 11 studs
(3) 12 studs
(4) 13 studs
(5) 14 studs

21. Counselors at a summer camp met to plan the camp day. Each day is $8\frac{3}{4}$ hours long. They want to break the day up into 5 segments. How long will each segment be?

(1) 2 hours
(2) $2\frac{3}{4}$ hours
(3) $1\frac{3}{4}$ hours
(4) $2\frac{1}{4}$ hours
(5) $1\frac{1}{2}$ hours

22. Marie is walking as part of her fitness program. She walks at a pace of 3 miles per hour. Currently, she is walking $3\frac{1}{3}$ miles each day. How long does it take her to walk $3\frac{1}{3}$ miles?

(1) $1\frac{1}{3}$ hours
(2) $1\frac{1}{9}$ hours
(3) $1\frac{1}{4}$ hours
(4) $\frac{2}{3}$ hour
(5) $\frac{3}{4}$ hour

23. Edward has begun walking, too. He can walk at a pace of 4 miles per hour. Today, Edward walked $3\frac{1}{2}$ miles. How long did he walk?

(1) $\frac{1}{4}$ hour
(2) $\frac{2}{8}$ hour
(3) $\frac{7}{8}$ hour
(4) $\frac{1}{2}$ hour
(5) $\frac{1}{3}$ hour

24. Sandra bought $5\frac{5}{8}$ pounds of grapes. She wants them to last for 5 days. How many pounds could she eat each day?

(1) 1 pound
(2) $1\frac{1}{8}$ pounds
(3) 2 pounds
(4) $1\frac{1}{2}$ pounds
(5) $\frac{3}{4}$ pound

25. Mr. Sanders wants to plant grass on a patch of land. The area of the patch is $15\frac{1}{2}$ square feet. The width is 4 feet. What is the length of the patch? (*Area ÷ width = length*)

(1) 3 feet
(2) 4 feet
(3) $3\frac{1}{2}$ feet
(4) $3\frac{7}{8}$ feet
(5) $2\frac{1}{2}$ feet

26. An aquarium offers tours for visitors. Each tour is $1\frac{1}{2}$ hours long. If there are 4 exhibits, how much time will visitors spend at each?

(1) $\frac{7}{8}$ hour
(2) $\frac{1}{2}$ hour
(3) $\frac{3}{4}$ hour
(4) $\frac{3}{8}$ hour
(5) $\frac{1}{4}$ hour