Epsilon Placement Test Answer Key

Solve.

1. $\frac{1}{2}$ of 24 = 12

2. $\frac{2}{3}$ of 18 = 12

3. $\frac{7}{8}$ of 64 = 56

Fill in the missing numbers in the numerators or denominators to make equivalent fractions.

4. $\frac{3}{4} = \frac{6}{8} = \frac{9}{12} = \frac{12}{16}$

5. $\frac{9}{10} = \frac{18}{20} = \frac{27}{30} = \frac{36}{40}$

Compare the fractions and write the correct symbol in the oval.

6. $\frac{5}{7}$ (>) $\frac{3}{5}$

7. $\frac{4}{8}$ (=) $\frac{3}{6}$

8. $\frac{4}{8}$ (<) $\frac{2}{3}$

Solve.

9. $\frac{3}{9} + \frac{5}{9} = \boxed{\frac{8}{9}}$

10. $\frac{1}{2} + \frac{1}{4} + \frac{7}{8}$ $\boxed{\frac{13}{8} = 1\frac{5}{8}}$

11. $\frac{4}{5} - \frac{1}{3} = \boxed{\frac{7}{15}}$

12. $\frac{1}{3} \div \frac{1}{5} = \boxed{\frac{5}{3} = 1\frac{2}{3}}$

13. $3\frac{1}{3} \div \frac{5}{18} =$

$$\frac{\cancel{10}^{2}}{\cancel{3}} \times \frac{\cancel{18}^{6}}{\cancel{5}} = 12$$

14. $3\frac{4}{5} \div 2\frac{7}{25} =$

$$\frac{\cancel{19}}{\cancel{5}} \times \frac{\cancel{25}^{5}}{\cancel{57}_{3}} = \frac{5}{3} = 1\frac{2}{3}$$

Solve.

15.
$$\begin{array}{r} 7\frac{1}{4} \\ -\,5\frac{3}{4} \\ \hline \end{array}$$

$$7\frac{1}{4} - 5\frac{3}{4} = 6\frac{5}{4} - 5\frac{3}{4} = 1\frac{2}{4} = 1\frac{1}{2}$$

16.
$$\begin{array}{r} 9\frac{2}{3} \\ +\,6\frac{5}{9} \\ \hline \end{array}$$

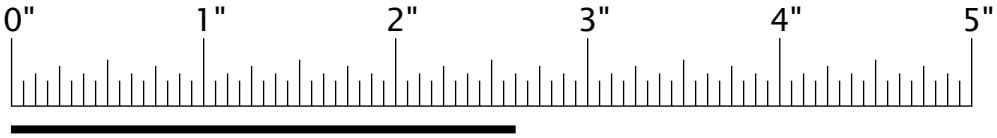
$$9\frac{2}{3} + 6\frac{5}{9} = 9\frac{18}{27} + 6\frac{15}{27}$$
$$= 15\frac{33}{27} = 16\frac{6}{27} = 16\frac{2}{9}$$

17.
$$\begin{array}{r} 5\frac{1}{5} \\ -\,2\frac{5}{6} \\ \hline \end{array}$$

$$5\frac{1}{5} - 2\frac{5}{6} = 5\frac{6}{30} - 2\frac{25}{30}$$
$$= 4\frac{36}{30} - 2\frac{25}{30} = 2\frac{11}{30}$$

Write the length of the line.

18. $2\frac{5}{8}$ in



Solve for the unknown and check your work.

19. $7X + 9 = 44$

$$7X = 35$$
$$\frac{1}{7} \cdot 7X = 35 \cdot \frac{1}{7}$$
$$X = 5$$

20. Check for #19

$$7(5) + 9 = 44$$
$$35 + 9 = 44$$
$$44 = 44$$

21. $\frac{3}{8}A - 8 = 13$

$$\frac{3}{8}A = 21$$
$$\frac{8}{3} \cdot \frac{3}{8}A = 21 \cdot \frac{8}{3}$$
$$A = \frac{168}{3} = 56$$

22. Check for #21

$$\frac{3}{8}(56) - 8 = 13$$
$$21 - 8 = 13$$
$$13 = 13$$

23. $\frac{5}{6}G + \frac{1}{6} = \frac{5}{12}$

$$\frac{5}{6}G = \frac{3}{12} = \frac{1}{4}$$
$$\frac{6}{5} \cdot \frac{5}{6}G = \frac{1}{4} \cdot \frac{6}{5}$$
$$G = \frac{6}{20} = \frac{3}{10}$$

24. Check for #23

$$\frac{5}{6} \cdot \frac{3}{10} + \frac{1}{6} = \frac{5}{12}$$
$$\frac{15}{60} + \frac{1}{6} = \frac{5}{12}$$
$$\frac{1}{4} + \frac{1}{6} = \frac{5}{12}$$
$$\frac{5}{12} = \frac{5}{12}$$

Solve.

25. $\frac{5}{8} \times \frac{1}{3} \times \frac{3}{5} =$ _____

$$\frac{\cancel{5}}{8} \times \frac{1}{\cancel{3}} \times \frac{\cancel{3}}{\cancel{5}} = \frac{1}{8}$$

26. $\frac{4}{5} \times 2\frac{3}{4} \times 3\frac{1}{3} =$ _____

$$\frac{\cancel{4}}{\cancel{5}} \times \frac{11}{\cancel{4}} \times \frac{\cancel{10}^{2}}{3} = \frac{22}{3} = 7\frac{1}{3}$$

Write each fraction in hundredths. Then write it as a decimal and as a percent.

27. $\frac{4}{5} = \frac{80}{100} = \underline{0.80} = \underline{80}\,\%$

28. $\frac{1}{4} = \frac{25}{100} = \underline{0.25} = \underline{25}\,\%$

29. What is the GCF of 15 and 45?

15: 3, 5, 15
45: 3, 5, 9, 15, 45
GCF = 15

30. What are the prime factors of 56?

$2 \times 2 \times 2 \times 7$

31. Change $7\frac{2}{3}$ to an improper fraction.

$7\frac{2}{3} = \frac{23}{3}$

32. Is 498 divisible by 9?

no

33. What is the approximate area of a circle with a radius of 21 feet?

$\frac{22}{7}(21^2) = \frac{22}{\cancel{7}} \cdot \frac{\overset{63}{\cancel{441}}}{1}$

$= \frac{1386}{1}$

$= 1{,}386$ sq ft

34. What is the approximate circumference of a circle with a radius of 21 feet?

$\frac{2}{1} \cdot \frac{22}{\cancel{7}} \cdot \frac{\overset{3}{\cancel{21}}}{1} = 132$ ft