Chapter 3 Review

Use a factor tree to write the prime factorization of each number.

1. 102 2. 420 3. 165 4. 7,315

Reduce each fraction to lowest terms by factoring and then dividing out common factors.

5. $\frac{22}{55}$

6. $\frac{14}{49}$

7. $\frac{10}{18}$

8. $\frac{210}{385}$

9. $\frac{16a}{20a}$

10. $\frac{21a}{30a}$

11. Find the product of $\frac{15}{8}$ and $\frac{4}{9}$.

12. Find the quotient of 12 and $3\frac{1}{6}$.

13. Find the sum of $\frac{11}{15}$ and $\frac{8}{21}$.

14. Find the difference of $\frac{7}{8}$ and $\frac{1}{4}$.

15. Find the area of a triangle with base 30 in. and height 10 in.

16. Find the area of the given figure:

Simplify each of the following:

17. $\left(\frac{2}{3}\right)^2$

18. $\left(-\frac{1}{2}\right)^2$

19. $\frac{3}{4}$ of $-12x$

20. $\frac{135}{16} \bullet \frac{2}{45}$

21. $\frac{13}{30}\left(-\frac{3}{13}\right)$

22. $\frac{ab^2}{c} \bullet \frac{c^3}{a^2b}$

23. $\frac{16}{135} \div \frac{2}{45}$

24. $-\frac{1}{2} - \frac{3}{4}$

25. $2 \bullet 4\frac{7}{8}$

26. $\frac{13}{126} - \frac{13}{180}$

27. $5\frac{3}{4} + 9\frac{5}{6}$

28. $\frac{25}{24} \div \frac{15}{36}$

29. $\frac{3/4}{5/6}$

30. $\frac{x}{y^3} \div \frac{x^3}{y}$

31. $\frac{2}{9} + \frac{5}{x}$

32. $8\frac{2}{3} \div 4\frac{1}{3}$

33. $\frac{17}{30} + \frac{11}{42}$

34. $\frac{10a^2}{3b} \div \frac{5a}{6b}$

35. $\frac{3}{8} + \frac{2}{5} + \frac{1}{4}$

36. $8\frac{1}{4} - 3\frac{3}{4}$

37. $2\frac{1}{3} \bullet 6\frac{3}{4}$

38. $\frac{5}{a} + \frac{3}{a}$

39. $\frac{5}{3}\left(1\frac{1}{5}\right) + \frac{5}{8}\left(3\frac{1}{5}\right)$

40. $12\frac{7}{10} - 8\frac{3}{5}$

41. $\frac{\frac{3}{4} + \frac{1}{3}}{\frac{2}{3} + \frac{1}{6}}$

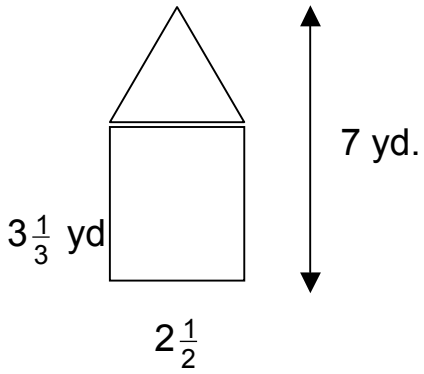
42. $\left(\frac{2}{5}\right)^0$

43. Find the perimeter:

$\frac{3}{8}$ yd.

$\frac{3}{4}$ yd.

44. Find the area:



Mixed-up Answers

a. $9\frac{3}{4}$

b. $1\frac{4}{35}$ or $\frac{39}{35}$

c. $\frac{2}{5}$

d. $2 \cdot 3 \cdot 17$

e. $\frac{7}{10}$

f. $\frac{13}{420}$

g. 150 in.^2

h. $-\frac{5}{4}$

i. $\frac{8}{3}$

j. $2^2 \cdot 3 \cdot 5 \cdot 7$

k. $\frac{4}{5}$

l. $\frac{5}{8}$

m. $\frac{3}{8}$

n. $\frac{2}{7}$

o. $\frac{5}{6}$

p. $3\frac{15}{19}$

q. $-\frac{1}{10}$

r. 54 mi.^2

s. $\frac{4}{9}$

t. $5 \cdot 3 \cdot 11$

u. $1\frac{3}{10}$ or $\frac{13}{10}$

v. 4

w. $\frac{1}{4}$

x. $5 \cdot 7 \cdot 11 \cdot 19$

y. $\frac{6}{11}$

z. 2

aa. $-9x$

bb. $\frac{bc^2}{a}$

cc. $\frac{2x+45}{9x}$

dd. $4a$

ee. $\frac{5}{9}$

ff. $\frac{9}{4}$ yd.

gg. $\frac{29}{35}$

hh. $\frac{9}{10}$

ii. $12\frac{11}{12} \text{ yds.}^2$

jj. $4\frac{1}{10}$ or $\frac{41}{10}$

kk. $\frac{1}{x^2y^2}$

ll. $\frac{41}{40}$ or $1\frac{1}{40}$

mm. $\frac{5}{2}$

nn. $4\frac{1}{2}$ or $\frac{9}{2}$

oo. $15\frac{7}{12}$

pp. $15\frac{3}{4}$

qq. $\frac{8}{a}$

rr. 1