

Chapter 0 Posttest

For each problem, determine whether you need an estimate or an exact answer. Then use the four-step problem solving plan to solve.

1. **DISTANCE** Fabio rode his scooter 2.3 miles to his friend's house, then 0.7 mile to the video store, then 2.1 miles to the library. If he rode the same route back home, about how far did he travel in all?

ANSWER:

estimate; about 10 mi

2. **SHOPPING** The regular price of a T-shirt is \$9.99. It is on sale for 15% off. Sales tax is 6%. If you give the cashier a \$10 bill, how much change will you receive?

ANSWER:

exact; \$1

Find each sum or difference.

3. $-31 + (-4)$

ANSWER:

-35

4. $48 - 55$

ANSWER:

-7

5. $-71 - (-10)$

ANSWER:

-61

6. $31 - 42.9$

ANSWER:

-11.9

7. $-11.5 + 8.1$

ANSWER:

-3.4

8. $-0.38 - (-1.06)$

ANSWER:

0.68

Find each product or quotient.

9. $-21(-5)$

ANSWER:

105

10. $-81 \div (-3)$

ANSWER:

27

11. $-120 \div 8$

ANSWER:

-15

12. $-39 \div -3$

ANSWER:

13

Replace each $\frac{\square}{\square}$ with $<$, $>$, or $=$ to make a true sentence.

13. $-0.62 \frac{\square}{\square} -\frac{6}{7}$

ANSWER:

$>$

14. $\frac{12}{44} \frac{\square}{\square} \frac{8}{11}$

ANSWER:

$<$

15. Order $4\frac{4}{5}$, 4.85, $2\frac{5}{8}$, and 2.6 from least to greatest.

ANSWER:

2.6, $2\frac{5}{8}$, $4\frac{4}{5}$, 4.85

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Find each sum or difference. Write in simplest form.

16. $\frac{1}{7} + \frac{5}{7}$

ANSWER:

$$\frac{6}{7}$$

17. $\frac{7}{8} - \frac{1}{8}$

ANSWER:

$$\frac{3}{4}$$

18. $\frac{1}{6} + \left(-\frac{1}{2}\right)$

ANSWER:

$$-\frac{1}{3}$$

19. $-\frac{1}{12} - \left(-\frac{3}{4}\right)$

ANSWER:

$$\frac{2}{3}$$

Find each product or quotient.

20. $-1.2(9.3)$

ANSWER:

$$-11.16$$

21. $-20.93 \div (-2.3)$

ANSWER:

$$9.1$$

22. $10.5 \div (-1.2)$

ANSWER:

$$-8.75$$

23. $(-3.4)(-2.8)$

ANSWER:

$$9.52$$

Name the reciprocal of each number.

24. 6

ANSWER:

$$\frac{1}{6}$$

25. $1\frac{2}{5}$

ANSWER:

$$\frac{5}{7}$$

26. $-2\frac{3}{7}$

ANSWER:

$$-\frac{7}{17}$$

27. $-\frac{1}{2}$

ANSWER:

$$-2$$

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

ANSWER:

$$\frac{3}{4}$$

29. $5\frac{1}{3}$

ANSWER:

$$\frac{3}{16}$$

Find each product or quotient. Write in simplest form.

30. $\frac{2}{5} \cdot \frac{5}{9}$

ANSWER:

$$\frac{2}{9}$$

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31. $\frac{4}{5} \div \frac{1}{5}$

ANSWER:

4

32. $-\frac{7}{8} \cdot 2$

ANSWER:

$-1\frac{3}{4}$

33. $\frac{1}{3} \div 2\frac{1}{4}$

ANSWER:

$\frac{4}{27}$

34. $-6 \cdot \left(-\frac{3}{4}\right)$

ANSWER:

$4\frac{1}{2}$

35. $\frac{7}{18} \div \left(-\frac{14}{15}\right)$

ANSWER:

$-\frac{5}{12}$

36. **PICNIC** Joseph is mixing $5\frac{1}{2}$ gallons of orange

drink for his class picnic. Every $\frac{1}{2}$ gallon requires 1 packet of orange drink mix. How many packets of orange drink mix does Joseph need?

ANSWER:

11 packets

Express each percent as a fraction in simplest form.

37. 6%

ANSWER:

$\frac{3}{50}$

38. 140%

ANSWER:

$\frac{7}{5}$

Use the percent proportion to find each number.

39. 50% of what number is 31?

ANSWER:

62

40. What number is 110% of 51?

ANSWER:

56.1

41. Find 8% of 95.

ANSWER:

7.6

42. **SOLUTIONS** A solution is prepared by dissolving 24 milliliters of saline in 150 milliliters of pure solution. What is the percent of saline in the pure solution?

ANSWER:

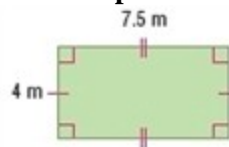
16%

43. **SHOPPING** Marta got 60% off a pair of shoes. If the shoes cost \$9.75 (before sales tax), what was the original price of the shoes?

ANSWER:

\$24.38

Find the perimeter and area of each figure.

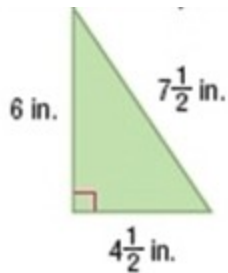


44.

ANSWER:

23 m; 30 m^2

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45.

ANSWER:

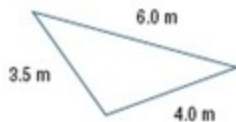
$$18 \text{ in.}; 13\frac{1}{2} \text{ in.}^2$$

46. A parallelogram has a base of 20 millimeters and a height of 6 millimeters. Find the area.

ANSWER:

$$120 \text{ mm}^2$$

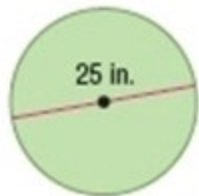
47. **GARDENS** Find the perimeter of the garden.



ANSWER:

$$13.5 \text{ m}$$

Find the circumference and area of each circle. Round to the nearest tenth.



48.

ANSWER:

$$78.5 \text{ in.}; 490.9 \text{ in}^2$$



49.

ANSWER:

$$22.0 \text{ cm}; 38.5 \text{ cm}^2$$

50. **PARKS** A park has a circular area for a fountain that has a circumference of about 16 feet. What is the radius of the circular area? Round to the nearest tenth.

ANSWER:

$$2.5 \text{ ft}$$

Find the volume and surface area of each rectangular prism given the measurements below.

51. $l = 1.5 \text{ m}$, $w = 3 \text{ m}$, $h = 2 \text{ m}$

ANSWER:

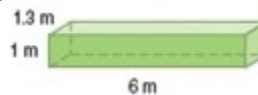
$$9 \text{ m}^3; 27 \text{ m}^2$$

52. $l = 4 \text{ in.}$, $w = 1 \text{ in.}$, $h = \frac{1}{2} \text{ in.}$

ANSWER:

$$2 \text{ in}^3; 13 \text{ in}^2$$

53. Find the volume and surface area of the rectangular prism.



ANSWER:

$$7.8 \text{ m}^3; 30.2 \text{ m}^2$$

One marble is randomly selected from a jar containing 3 red, 4 green, 2 black, and 6 blue marbles. Find each probability.

54. $P(\text{red or blue})$

ANSWER:

$$\frac{3}{5}$$

55. $P(\text{green or red})$

ANSWER:

$$\frac{7}{15}$$

56. $P(\text{not black})$

ANSWER:

$$\frac{13}{15}$$

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57. $P(\text{not blue})$

ANSWER:

$$\frac{3}{5}$$

Use a tree diagram to find the sample space for the event. State the number of possible outcomes.

58. A movie theater is offering snack specials. You can choose a small, medium, large, or jumbo popcorn with or without butter, and soda or bottle water.

ANSWER:

16 outcomes

One coin is randomly selected from a jar containing 20 pennies, 15 nickels, 3 dimes, and 12 quarters. Find the odds of each outcome. Write in simplest form.

59. a dime

ANSWER:

3:47

60. a value less than \$0.25

ANSWER:

19:6

61. a value greater than \$0.10

ANSWER:

6:19

62. a value less than \$0.05

ANSWER:

2:3

63. **SCHOOL** In a science class, each student must choose a lab project from a list of 15, write a paper on one of 6 topics, and give a presentation about one of 8 subjects. How many ways can students choose to do their assignments?

ANSWER:

720 ways

64. **GAMES** Marcos has been dealt seven different cards. How many different ways can he play his cards if he is required to play one card at a time?

ANSWER:

5040 ways

Find the mean, median, and mode for each set of data.

65. {99, 88, 88, 92, 100}

ANSWER:

93.4; 92; 88

66. {30, 22, 38, 41, 33, 41, 30, 24}

ANSWER:

32.375; 31.5; 30 and 41

67. Find the range, median, lower quartile, and upper quartile for {77, 75, 72, 70, 79, 77, 70, 76}.

ANSWER:

9; 75.5; 71; 77

68. **TESTS** Kevin's scores on the first four science tests are 88, 92, 82, and 94. What score must he earn on the fifth test so that the mean will be 90?

ANSWER:

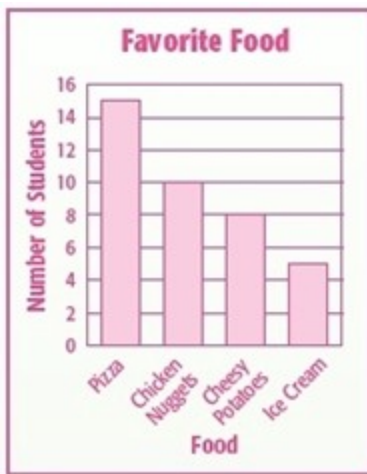
94

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69. **FOOD** The table shows the results of a survey in which students were asked to choose their favorite food. Make a bar graph of the data.

Favorite Foods	
Food	Number of Students
pizza	15
chicken nuggets	10
cheesy potatoes	8
ice cream	5

ANSWER:

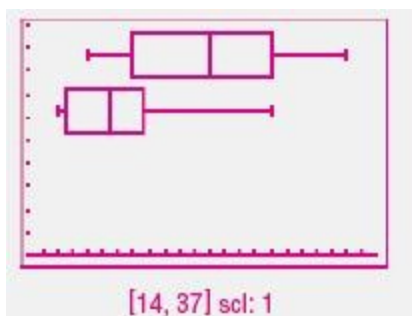


70. Make a double box-and-whisker plot of the data.

A: 26, 18, 26, 29, 18, 20, 35, 32, 31, 24, 26, 22

B: 16, 20, 16, 19, 21, 30, 25, 22, 21, 19, 16, 17

ANSWER:



71. **BUDGET** The table shows how Kat spends her allowance. Make a circle graph of the data.

Category	Amount (\$)
Savings	25
Clothes	10
Entertainment	15

ANSWER:

