

Chapters 1–7  
First-Semester Exam

- \_\_\_\_\_ 1. Round 265,819,483 to the nearest ten thousand.
- \_\_\_\_\_ 2. Estimate  $77 \times 429$  by rounding to the highest place value.
- \_\_\_\_\_ 3. Evaluate  $7 \cdot 3^4$ .
- \_\_\_\_\_ 4. Simplify  $12 + 18 \div 2$ .
5. Name the property illustrated by  $(7 + 4) + 5 = (4 + 7) + 5$ .
6. Write the expanded form of 7,492 using exponential notation.
7. List the following in increasing order: 0.573, 0.5699, 0.5966, 0.58.
8. List the first six positive multiples of 7.
9. List all the positive factors of 18.
10. Write the prime factorization of 792.
- \_\_\_\_\_ 11. Find the greatest common factor of 90 and 168.

\_\_\_\_\_ 12. Find the least common multiple of 18 and 24.

\_\_\_\_\_ 13. Write 407,000 in scientific notation.

\_\_\_\_\_ 14. Multiply:  $(1.5 \times 10^6)(2.2 \times 10^8)$ . Give the answer in correct scientific notation.

\_\_\_\_\_ 15. Add:  $42,367 + 9,327 + 44,098$ .

**Perform the following operations.**

\_\_\_\_\_ 16.  $6,935 \div 73$

\_\_\_\_\_ 18.  $0.0264 \times 3.8$

\_\_\_\_\_ 17.  $726.94 - 289.37$

\_\_\_\_\_ 19.  $468.2 \div 4.6$   
(nearest tenth)

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Perform the following operations.

\_\_\_\_\_ 20.  $35\frac{1}{2} - 12\frac{7}{8}$

\_\_\_\_\_ 22.  $\frac{9}{32} \div \frac{3}{16}$

\_\_\_\_\_ 21.  $\frac{15}{16}\left(\frac{4}{9}\right)$

\_\_\_\_\_ 23. Change  $234_5$  to base 10.

\_\_\_\_\_ 24. Find the next three terms of the sequence 1, 5, 9, 13, 17, ...

\_\_\_\_\_ 25. Reduce  $\frac{126}{308}$  to lowest terms.

\_\_\_\_\_ 26. Write  $\frac{74}{9}$  as a mixed number.

\_\_\_\_\_ 27. Compare  $\frac{7}{8}$  to  $\frac{20}{23}$ , using  $<$ ,  $=$ , or  $>$ .

- \_\_\_\_\_ 28. Write the reciprocal of  $\frac{8}{9}$ .
- \_\_\_\_\_ 29. Express  $\sqrt{\frac{36}{4}}$  as a reduced rational number.
- \_\_\_\_\_ 30. Express 0.72 as a reduced rational number.
- \_\_\_\_\_ 31. Solve  $\frac{x}{8} = \frac{72}{36}$ .
- \_\_\_\_\_ 32. A pet store has for sale 3 Siamese kittens, 2 black kittens, 4 sheltie pups, 3 cocker spaniel pups, 2 schnauzer pups, and 1 chow pup. What is the ratio of pups to kittens?
- \_\_\_\_\_ 33. What is the distance between two cities shown  $3\frac{1}{4}$  in. apart on a map with a scale of 1 in. to 40 mi.?
- \_\_\_\_\_ 34. Write  $\frac{8}{25}$  as a decimal and as a percent.
- \_\_\_\_\_ 35. Find 8% of 175.

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\_\_\_\_\_ 36. 27 is what percent of 75?

\_\_\_\_\_ 37. A  $3\frac{1}{2}$  in.  $\times$  5 in. photo is copied using a 120% setting. Find its dimensions to the nearest tenth of an inch.

\_\_\_\_\_ 38. Find the sale price of a \$250 dress reduced 25%.

\_\_\_\_\_ 39. Find the total cost of a \$17.50 item with a 6% sales tax.

\_\_\_\_\_ 40. Find the amount of interest on a simple-interest loan of \$500 at 7% for 18 months.

\_\_\_\_\_ 41. Find the earnings from \$31,000 of sales at 12.5% commission.

- \_\_\_\_\_ 42. Attendance at an annual event last year was estimated at 17,000. This year, the attendance was estimated at 15,000. To the nearest percent, what was the percent of decrease?

**Convert to the designated unit.**

\_\_\_\_\_ 43. 4.5 lb. = \_\_\_\_\_ oz. \_\_\_\_\_ 45. 174 hm = \_\_\_\_\_ km

\_\_\_\_\_ 44. 75 ft. = \_\_\_\_\_ yd. \_\_\_\_\_ 46. 4.3 m = \_\_\_\_\_ cm

\_\_\_\_\_ 47. Add: 2 hr. 42 min. + 3 hr. 39 min.

- \_\_\_\_\_ 48. A flight departs at 10:53 AM and arrives at its destination in the same time zone at 2:37 PM. Find the flight time.

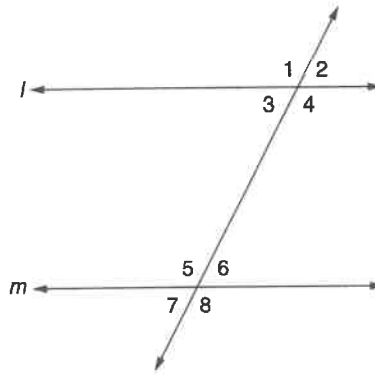
- \_\_\_\_\_ 49. Which is more precise, 20.1 km or 20 km?

- \_\_\_\_\_ 50. Which is the most likely Celsius temperature for ice skating?  
a. 16°C      b. 8°C      c. -8°C

Chapters 8–14  
Second-Semester Exam

- \_\_\_\_\_ 1. What are two angles whose sum is  $90^\circ$  called?
- \_\_\_\_\_ 2. How many sides does a hexagon have?
- \_\_\_\_\_ 3. A parallelogram whose four sides are all congruent is a(n) \_\_\_\_\_.
- \_\_\_\_\_ 4. Name the property illustrated by  $-4[5 + (-6)] = -4(5) + (-4)(-6)$ .
- \_\_\_\_\_ 5. Find  $7!$ .
- \_\_\_\_\_ 6. Find the supplement of  $76^\circ$ .
- \_\_\_\_\_ 7. If two angles of a triangle are  $72^\circ$  and  $44^\circ$ , find the third angle.
- \_\_\_\_\_ 8. If the legs of a right triangle are 7 and 10, find the length of the hypotenuse.
- \_\_\_\_\_ 9. Find the circumference of a circle with a radius of 8. Use 3.14 for  $\pi$ .
- \_\_\_\_\_ 10. If  $\triangle ACY \cong \triangle PBX$ , then  $\overline{CY}$  is congruent to which side of  $\triangle PBX$ ?

- \_\_\_\_\_ 11. Given  $l \parallel m$  and  $m\angle 2 = 65^\circ$ , find  $m\angle 6$ .

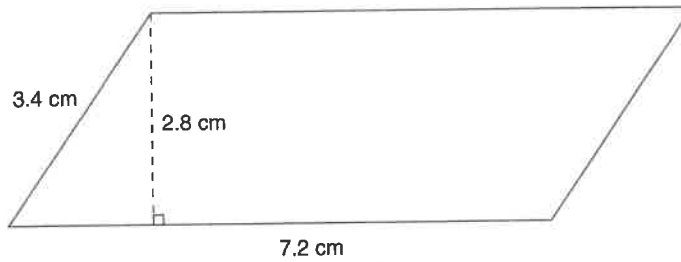


- \_\_\_\_\_ 12. Find the number of ways to choose a shirt, a tie, and pants if there are 4 shirts, 5 ties, and 3 pairs of pants to choose from.

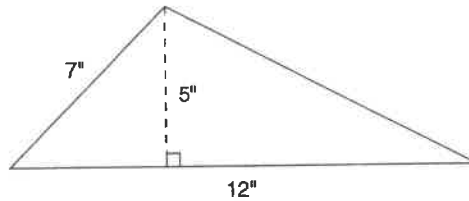
- \_\_\_\_\_ 13. A bag contains 9 white marbles, 5 black marbles, and 6 red marbles. If a marble is drawn one at a time, find the probability of drawing a black marble.

**Find the area of the following figures.**

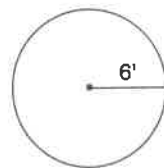
- \_\_\_\_\_ 14.



- \_\_\_\_\_ 15.



- \_\_\_\_\_ 16. (Use 3.14 for  $\pi$ .)

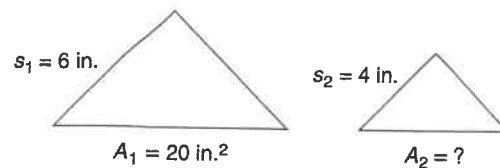


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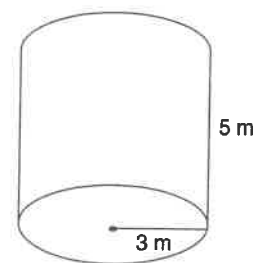
- \_\_\_\_\_ 17. The given triangles are similar. Find  $A_2$  to the nearest tenth.



- \_\_\_\_\_ 18. Find the surface area of a rectangular prism with dimensions  $9 \text{ ft.} \times 5 \text{ ft.} \times 2 \text{ ft.}$

- \_\_\_\_\_ 19. Find the volume of the rectangular prism in question 18.

- \_\_\_\_\_ 20. Find the volume of the cylinder shown. Use 3.14 for  $\pi$ .



- \_\_\_\_\_ 21. List  $-2, 7, -9, 3,$  and  $0$  in increasing order.

- \_\_\_\_\_ 22. The low temperature in February was  $-12^\circ\text{F}$  and the range was  $65^\circ$ . What was the high for the month?

- \_\_\_\_\_ 23. Write an equation for the sentence "four more than twice  $y$  is 27."

Use the following table of data for questions 24–27.

Score	Frequency
10	4
9	2
8	4
7	8
6	1
5	2

\_\_\_\_\_ 24. Find the mean. Round to the nearest tenth.

\_\_\_\_\_ 25. Find the median.

\_\_\_\_\_ 26. Find the mode.

27. Make a bar graph representing the data in the table.

**Simplify.**

\_\_\_\_\_ 28.  $|2(-8)| - 7$

\_\_\_\_\_ 31.  $-48 \div (-4)$

\_\_\_\_\_ 29.  $18 + (-11) - 8$

\_\_\_\_\_ 32.  $13 + 5 \times 16 - 12 \div 2$

\_\_\_\_\_ 30.  $-5(8)$

\_\_\_\_\_ 33. Solve  $x - 17 = -2$ .

34. Identify the operations needed to solve the following equation and the order in which they would need to be performed:  $\frac{a}{6} - 5 = 18$ .

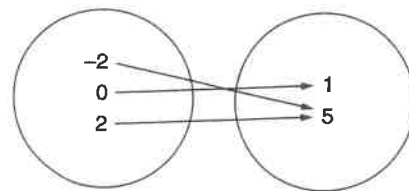
35. Write an equation and solve the given sentence.  
Six more than the product of 5 and  $d$  is 34.

36. Solve the inequality  $3x - 8 > 25$ .

37. Graph the inequality  $x < 2$ .

\_\_\_\_\_ 38. In which quadrant does the point  $(-2, -6)$  lie?

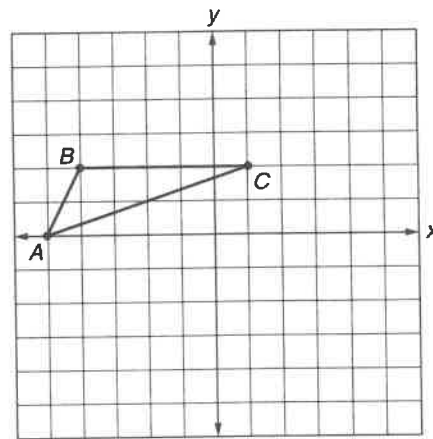
39. Does the mapping shown represent a function? Why or why not?



40. Make a circle mapping of the relation  $C = \{(-3, 2), (-3, -2), (0, 0)\}$ . Is it a function?

41. Find  $f(5)$ , if  $f(x) = -3x + 4$ .
42. Find three ordered pairs for the function  $f(x) = x - 4$ , using  $x = -3, 2$ , and  $6$ .
43. Use the formula to find the slope of the line through  $(-5, -2)$  and  $(3, 7)$ .

44. Translate the graph shown using the rule  $(x', y') = (x + 3, y - 4)$ .



45. Is the following sentence a conjunction or a disjunction?  
Trevor and Kevin went yesterday, but Marie and Lois are going today.
46. Combine the following statements to form a conditional.  
We get a heavy rain shower tonight. The game will be canceled.

**Negate each of the following statements.**

47. I prefer caramel to chocolate.
48. Lemonade or limeade will quench your thirst.
49. List all the subsets of  $\{5, 6\}$ .
50. Find  $A \cap B$ , if  $A = \{1, 2, 3, 4, 5\}$  and  $B = \{2, 4, 6\}$ .