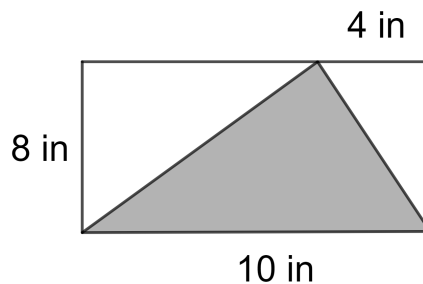


Class 7 Practice Problems

February 5, 2019

- To help prepare for food needs, an animal shelter uses the formula $P = \frac{27D}{W}$, where P is the pounds of dog food, D is the number of dogs in the shelter, and W is the average weight of the dogs. Which of the following gives the number of dogs that can be fed with 1,200 pounds of food if the average weight of the dogs is 34 pounds?
 - $\frac{(34)(1200)}{(27)}$
 - $\frac{(27)(1200)}{(34)}$
 - $\frac{(27)(34)}{(1200)}$
 - $\frac{(27)}{(34)(1200)}$
 - $\frac{(1200)}{(27)(34)}$
- Suppose that x will be randomly selected from the set $-4, -2, 0, 1, 2$ and that y will be randomly selected from the set $-1, 0, 1, 2$. What is the probability that $xy > 0$?
 - $\frac{3}{20}$
 - $\frac{1}{10}$
 - $\frac{3}{10}$
 - $\frac{4}{200}$
 - $\frac{7}{15}$
- The surface of a TV screen has an area of 864 inches, and a width of 24 inches. What is the length in inches of the TV screen?
 - 12
 - 24
 - 36
 - 48
 - 60
- A child's piggy bank contains 2 nickels, 5 dimes, and 8 quarters. If the child pulls out one coin at random, what is the probability that the coin that is picked will be a dime?
 - $\frac{1}{4}$
 - $\frac{1}{3}$
 - $\frac{8}{15}$
 - $\frac{5}{7}$
 - $\frac{13}{15}$
- In her closet, Janice has 3 pairs of shoes, 5 pairs of pants and 4 jackets. She wants to put together an outfit that contains 1 pair of shoes, 1 pair of pants, and 1 jacket. How many different outfits can Janice choose from?

- (a) 3
 (b) 12
 (c) 27
 (d) 32
 (e) 60
6. The formula for the volume of a sphere is $V = \frac{4}{3}\pi r^3$, where r is the radius of the sphere. Using $\frac{22}{7}$ as an approximation for the value of π , which of the following values is closest to the volume, in cubic centimeters, of a sphere with a radius of 5 inches?
- (a) 125
 (b) 264
 (c) 312
 (d) 407
 (e) 524
7. What is the sum of $3x^2 - 7x + 24$ and $-x^2 - 8x + 62$?
- (a) $-4x^2 - 15x + 84$
 (b) $-2x^2 + x + 86$
 (c) $2x^2 + x + 62$
 (d) $2x^2 - 15x + 86$
 (e) $4x^2 - 15x + 84$
8. The ratio of Pam's age to her mother's age is 3:8. The sum of their ages is 44. How old is Pam?
- (a) 3
 (b) 4
 (c) 9
 (d) 10
 (e) 12
9. The rectangle shown below is partitioned into 3 triangles, 1 of which is shaded. What is the total area, in square inches, of the 2 un-shaded regions?

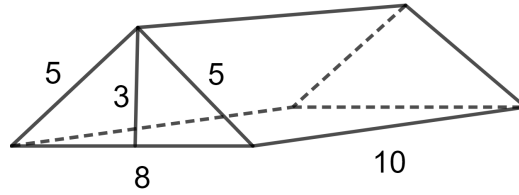


- (a) 20
 (b) 24
 (c) 32
 (d) 40
 (e) 80

10. Given functions $f(x) = 3x - 1$ and $g(x) = \frac{x^2+4}{3}$, what is the value of $f(g(-2))$?
- (a) 7
 - (b) 10
 - (c) 14
 - (d) 23
 - (e) 25
11. The scores below are the scores earned by 10 bowlers in a recent competition. What is the median score?
- 141, 112, 162, 177, 132, 130, 153, 110, 166, 173
- (a) 132
 - (b) 141
 - (c) 147
 - (d) 153
 - (e) 155
12. A bag contains 16 red marbles, 7 yellow marbles, and 19 green marbles. How many additional red marbles must be added to the 42 marbles already in the bag so that the probability of randomly drawing a red marble is $\frac{3}{5}$?
- (a) 18
 - (b) 23
 - (c) 37
 - (d) 2
 - (e) 52
13. For all real numbers x such that $x \neq 0$, $\frac{5}{6} + \frac{8}{x} = ?$
- (a) $\frac{13}{6x}$
 - (b) $\frac{40}{6x}$
 - (c) $\frac{13}{6+x}$
 - (d) $\frac{8x+30}{6+x}$
 - (e) $\frac{5x+48}{6x}$
14. Set A and Set B each consist of 5 distinct numbers. The 2 sets contain identical numbers with the exception of the number with the least value in each set. The number with the least value in set B is greater than the number with the least value in Set A. The value of which of the following measures *must* be greater for Set B than for Set A?
- (a) Mean Only
 - (b) Median Only
 - (c) Mode Only
 - (d) Mean and Median Only
 - (e) Mean, Median, and Mode
15. The 27 member Math Club is meeting to choose a public speaker for the group. The members decide that the speaker, who will be chosen at random, CANNOT be any of the three officers of the club. What is the probability that Jordan, who is a member of the club and not an officer, will be chosen?

- (a) 0
(b) $\frac{4}{27}$
(c) $\frac{1}{27}$
(d) $\frac{1}{4}$
(e) $\frac{1}{24}$
16. The average of 6 distinct scores has the same value and the median of the 6 scores. The sum of the 6 scores is 192. What is the sum of the 5 scores that are NOT the median?
- (a) 142
(b) 160
(c) 162
(d) 166
(e) 172
17. Cindy plans to wallpaper the 9 foot rectangular walls in her bathroom. Before she buys wallpaper, she needs to know the area of the wall surface to be wallpapered. Two walls are 7 feet wide, and the other 2 walls are 10 feet wide. The combined area of the 1 mirror and 1 door in the bathroom is 40 square feet. What is the area in square feet, of the wall surface Cindy plans to wallpaper?
- (a) 200
(b) 242
(c) 266
(d) 340
(e) 360
18. On a google map, $\frac{1}{3}$ of an inch represents 20 miles. If two cities on the google map are $6\frac{1}{3}$ inches apart, how many actual miles apart are the two cities?
- (a) 120
(b) 244
(c) 260
(d) 380
(e) 390
19. What is the value of $r^2 + rb + 7g$ when $r = -5$, $b = 2$, and $g = 3$?
- (a) -14
(b) 6
(c) 12
(d) 21
(e) 36
20. Which of the following expressions is equivalent to $(3x - 1)(-2x - 5)$?
- (a) $(3x + 1)(2x + 5)$
(b) $(3x - 1)(2x - 5)$
(c) $(3x - 1)(2x + 5)$
(d) $(-3x + 1)(2x - 5)$
(e) $(-3x + 1)(2x + 5)$

21. A right prism with triangular bases and with dimensions given in inches is shown below. What is the prism's total surface area, in square inches?



- (a) 120
- (b) 204
- (c) 228
- (d) 240
- (e) 264