

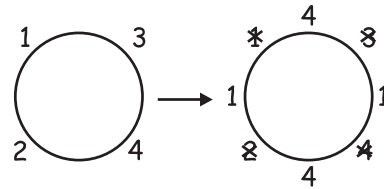
Workout 5

1. gallons A tank contains 10,000 gallons of water at the beginning of the day on June 1. Each day, 1% of the water in the tank at the beginning of the day is lost to evaporation. How much water is left at the end of the last day of June? Express your answer to the nearest whole number.
2. sq units An acute angle of a right triangle is 30° , and the hypotenuse is 40 units. What is the area of the triangle? Express your answer as a decimal to the nearest tenth.
3. % Larry bought two coats at a thrift store and then sold the coats a week later for \$135 each. He made a profit of 25% on the first coat but lost 25% on the second coat. What total percent did he lose on the sale of the two coats? Express your answer to the nearest hundredth.



4. feet A Super-Duper bouncy ball is dropped straight down from a height of 80 feet. Each time the ball hits the ground it bounces straight back up $\frac{3}{4}$ of the height from which it just fell. How many total feet had the ball traveled when it hit the ground the third time?
5. $^\circ\text{F}$ A method for estimating the conversion between $^\circ\text{Celsius}$ and $^\circ\text{Fahrenheit}$ is to double the Celsius temperature and then add 30° to get the Fahrenheit temperature. The exact formula for the conversion is $F = \frac{9}{5}C + 32$. If the Celsius temperature is 10° , what is the difference between the estimated Fahrenheit temperature and the actual Fahrenheit temperature?
6. _____ An integer is pseudoperfect if it is the sum of two or more of its positive divisors. (A divisor may be used only once in the sum.) For instance, 20 is pseudoperfect because its divisors 1, 4, 5 and 10 have a sum of 20. What is the sum of all the pseudoperfect integers between 50 and 60?

7. _____ The numbers 1, 2, 3 and 4 are placed in any order about a circle. At each turn of a game, a new circle is formed with four new entries, each of which is the square of the difference of each pair of adjacent numbers. Each new entry is placed between the two numbers from which it was calculated, and the old numbers are erased. What is the largest possible number ever to appear when playing the game if any initial ordering of the numbers 1, 2, 3 and 4 may be used?



8. sq ft A 20-foot-high rectangular room has a floor that measures 18' by 15'. Its doorway measures 3' by 12', and its only window measures 7' by 10'. How many square feet of wall space does the room have?
9. hours A boat has a speed of 6 mph in still water. The boat can travel 30 miles with the current in the same time in which it can travel 18 miles against the current. How many hours are necessary for the boat to travel 36 miles against the current?
10. birds A bird collection has exactly four types of birds (eagles, doves, crows and sparrows). The eagles and doves make up 60% of the collection, and the doves and crows make up 20% of the collection. If the 18 crows in the collection represent 5% of the total number of birds, how many of the birds are sparrows?