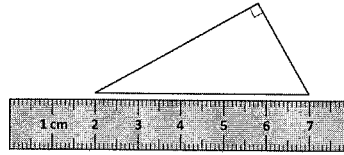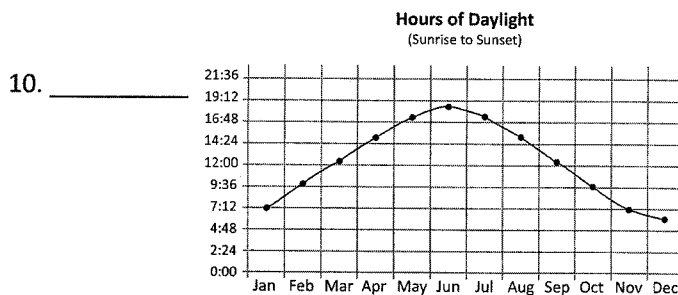# Warm-Up 1

1. _____ cm What is the length, to the nearest centimeter, of the hypotenuse of the right triangle shown?

2. _____ cm If the ratio of the length of a rectangle to its width is $\frac{9}{4}$ and its length is 18 cm, what is the width of the rectangle?

3. _____ bins Mike bought $2\frac{3}{4}$ pounds of rice. He wants to distribute it among bins that each hold $\frac{1}{3}$ pound of rice. How many bins can he completely fill?

4. ____:____ p.m. It took Jessie 15 minutes to drive to the movie theater from home. He waited 10 minutes for the movie to start, and the movie lasted 1 hour 43 minutes. After the movie ended, Jessie immediately went home. It took Jessie 25 minutes to drive home from the theater. If he left for the movie at 4:05 p.m., at what time did he get home?

5. $_____ A carnival pass costs $15 and is good for 10 rides. This is a savings of $2.50 compared to paying the individual price for 10 rides. What is the individual price of a ride without the pass?

6. _____ If $x + y = 7$ and $x - y = 1$, what is the value of the product $x \cdot y$?

7. _____ Mrs. Stephens has a bag of candy. The ratio of peppermints to chocolates is 5:3, and the ratio of peppermints to gummies is 3:4. What is the ratio of chocolates to gummies? Express your answer as a common fraction.

8. _____ degrees The angles of a triangle form an arithmetic progression, and the smallest angle is 42 degrees. What is the degree measure of the largest angle of the triangle?

9. _____ Each of the books on Farah's shelves is classified as sci-fi, mystery or historical fiction. The probability that a book randomly selected from her shelves is sci-fi equals 0.55. The probability that a randomly selected book is mystery equals 0.4. What is the probability that a book selected at random from Farah's shelves is historical fiction? Express you answer as a decimal to the nearest hundredth.

Hours of Daylight
(Sunrise to Sunset)

10. _____ According to the graph shown, which of the other eleven months has a number of daylight hours most nearly equal to the number of daylight hours in April?

Warm-Up 2

11. _____ Consider the following sets: A = {2, 5, 6, 8, 10, 11}, B = {2, 10, 18} and C = {10, 11, 14}. What is the greatest number in either of sets B or C that is also in set A?

12. _____°F The temperature is now 0 °F. For the past 12 hours, the temperature has been decreasing at a constant rate of 3 °F per hour. What was the temperature 8 hours ago?

13. _____ What is the value of x if $\dfrac{1}{x} + \dfrac{1}{2x} = \dfrac{1}{2}$?

14. _____ In June, Casey counted the months until he would turn 16, the minimum age at which he could obtain his driver's license. If the number of months Casey counted until his birthday was 45, in what month would Casey turn 16?

15. _____ buckets It takes 1 gallon of floor wax to cover 600 ft². If floor wax is sold only in 1-gallon buckets, how many buckets of floor wax must be purchased to wax the floors of three rooms, each measuring 20 feet by 15 feet?

16. _____ Consider the pattern below:
$22^2 = 121 \times (1 + 2 + 1)$
$333^2 = 12{,}321 \times (1 + 2 + 3 + 2 + 1)$
$4444^2 = 1{,}234{,}321 \times (1 + 2 + 3 + 4 + 3 + 2 + 1)$
For what positive value of n will $n^2 = 12{,}345{,}654{,}321 \times (1 + 2 + 3 + 4 + 5 + 6 + 5 + 4 + 3 + 2 + 1)$?

17. _____ times If United States imports increased 20% and exports decreased 10% during a certain year, the ratio of imports to exports at the end of the year was how many times the ratio at the beginning of the year? Express your answer as a common fraction.

18. _____ James needs $150 to buy a cell phone. In January, he saved $5. He saved twice as much in February as he saved in January, for a total savings of $15. If James continues to save twice as much each month as he saved the previous month, in what month will his total savings be enough to purchase the cell phone?

19. _____ cm What is the perimeter of △ADE shown here?
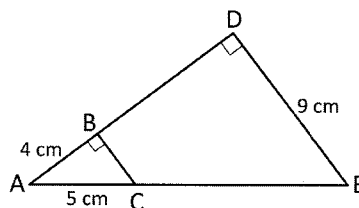
20. _____ females The following table shows the results of a survey of a random sample of people at a local fair. If there are 1100 people at the fair, how many females would you expect to prefer the Flume?

Favorite Ride	Male	Female
Ferris Wheel	15	20
Roller Coaster	24	14
Carousel	6	10
Flume	5	6

Workout 1

21. _____ hours   It takes Natasha nine hours to mow six lawns. On average, how many hours does it take her to mow each lawn? Express your answer as a decimal to the nearest tenth.

22. _____   What is the value of $(\pi^4 + \pi^5)^{\frac{1}{6}}$ when expressed as a decimal to the nearest hundredth?

23. _____ cm   What is the length of a diagonal that cuts through the center of a cube with edge length 4 cm? Express your answer in simplest radical form.

24. $ _____   Carol finds her favorite brand of jeans on sale for 20% off at the mall. If the jeans are regularly $90 and the tax is 7.5%, how much will she pay for one pair of jeans?

25. _____   What is the value of 1 + 1 when written in base 2?

26. _____ euros   In May 2002, the exchange rate for converting U.S. dollars to euros was 1 dollar = 1.08 euros. At this rate, 250 U.S. dollars could be exchanged for how many euros?

27. _____ units   Two sides of a right triangle have lengths 5 units and 12 units. If the length of its hypotenuse is not 13 units, what is the length of the third side? Express your answer in simplest radical form.

28. _____ ft²   A Norman window has the shape of a rectangle on three sides, with a semicircular top. This particular Norman window includes a 2-foot by 2-foot square. What is the area of the whole window? Express your answer as a decimal to the nearest hundredth.

2 ft

2 ft

29. _____   A fair coin is flipped, and a standard die is rolled. What is the probability that the coin lands heads up and the die shows a prime number? Express your answer as a common fraction.

30. _____ in³   Bailey is estimating the volume of a container. The container is a cube that measures 2 feet 7 inches on each edge. Bailey estimates the volume by using 3 feet for each edge. In cubic inches, what is the positive difference between Bailey's estimate and the actual volume?