

Workout 6

- _____ The sides of a quadrilateral have lengths x , $x + 1$, $x + 2$ and $x + 3$ units. The value of the perimeter is less than 100 units and is a perfect cube. The mean of the side lengths is twice the square root of the perimeter. What is the value of x ? Express your answer as a decimal to the nearest tenth.
- _____ The sum of a and 4, the difference of b and 4, the product of c and 4 and the quotient of d and 4 are all equal to the same integer value. If the sum of a , b , c and d is 100, what is the ratio of a to d ? Express your answer as a common fraction.
- _____ times Kelly's heart beats 60 times per minute when she is sleeping. If she sleeps 7 hours per day for all of 2009 and 2010, how many times will her heart beat while sleeping for those two years? Express your answer in scientific notation with five significant digits.
- _____ feet A farmer's field is in the shape of regular hexagon ABCDEF. The distance from point A to point B is 420 feet. A fence post is placed at each vertex of the hexagon, and each side has 16 evenly spaced fence posts (counting the posts at the vertices). What is the distance from the center of one fence post to the center of an adjacent fence post on a side of the hexagonal field?
- _____ sq cm A circle with a radius of 2.5 cm is inscribed in a square. What is the area within the square region but outside the circular region? Express your answer as a decimal to the nearest tenth.

- _____ yards According to this data, what is the positive difference between the mean number of yards for the top five rushers and the mean number of yards for the top five passers? Express your answer as a decimal to the nearest tenth.

Playoff Leaders

Top 5 NFL Passers	Yards	Top 5 NFL Rushers	Yards
Roethlisberger PIT	680	Foster CAR	205
Delhomme CAR	655	Alexander SEA	141
Brady NE	542	Bettis PIT	137
Hasselbeck SEA	434	Parker PIT	132
Plummer DEN	420	Anderson DEN	105

- _____ % A square is inscribed in a circle that forms a dartboard. If a dart randomly hits the dartboard, what is the probability it will hit the region outside the square but inside the circle? Express your answer as a percent to the nearest tenth.
- \$ _____ The 460 students and 20 staff at Bosney School are planning a bus trip. The bus company has large buses that can hold up to 64 passengers and small buses that can hold up to 40 passengers. The large buses cost \$960 each and the small buses cost \$680 each. What is the cost per passenger for the cheapest combination of buses?
- _____ cm What is the total perimeter of a sector of a circle with a radius of 3 cm and a central angle measuring 90° ? Express your answer as a decimal to the nearest tenth.
- _____ If $\sqrt{5 + \sqrt{1 + x}} = \sqrt{2} + \sqrt{3}$, what is the value of x ?

