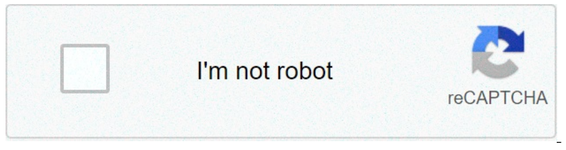

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10-4 perimeters and areas of similar figures worksheet answers

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Problem 4 :A trading pit at the Chicago Board of Trade is in the shape of a series of regular octagons. One octagon has a side length of about 14.25 feet and an area of about 980.4 square feet. Find the area of a smaller octagon that has a perimeter of about 76 feet.Problem 5 :Mr. Alex is buying photographic paper to print a photo in different sizes. An 8 inch by 10 inch sheet of the paper costs $0.42. What is a reasonable cost for a 16 inch by 20 inch sheet ? Detailed Answer Key Problem 1 : Pentagons ABCDE and LMNPQ shown below are similar. (a) Find the ratio (red to blue) of the perimeters of the pentagons. (a) Find the ratio (red to blue) of the areas of the pentagons. Solution : The ratio of the lengths of corresponding sides in the pentagons is = 5 / 10= 1 / 2= 1 : 2Solution (a) : Because the ratio of the lengths of the corresponding sides is 1 : 2, the ratio of the perimeters is also 1 : 2. So, the perimeter of pentagon ABCDE is half the perimeter of pentagon LMNPQ. Solution (b) : The ratio of the lengths of the corresponding sides in the pentagons is 1 : 2. Using the Theorem, the ratio of the areas is = 12 : 22= 1 : 4So, the area of pentagon ABCDE is one fourth the area of pentagon LMNPQ.Problem 2 : The red and blue figures shown below are similar. Find the ratio (red to blue) of their perimeters and of their areas. Solution : Ratio of the perimeters :The ratio of the lengths of corresponding sides in the hexagon is = 3 / 9= 1 / 3= 1 : 3Hence, the ratio of the perimeters is also 1 : 3. Ratio of the areas :The ratio of the lengths of the corresponding sides in the pentagons is 1 : 3. Using the Theorem, the ratio of the areas is = 12 : 32= 1 : 9Problem 3 :The red and blue figures shown below are similar. Find the ratio (red to blue) of their areas using the theorem and justify your answer. 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