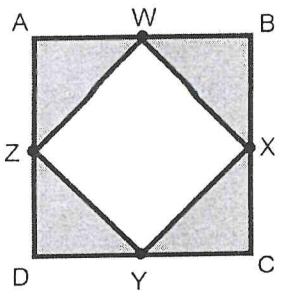
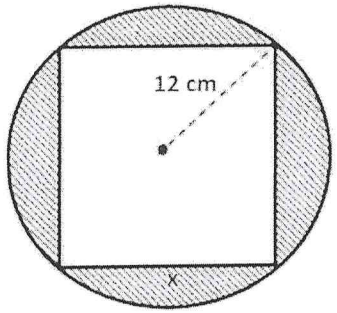
Algebra 2 Bellwork: Friday, January 30, 2015

1. Find the area of the shaded region.
ABCD is a square with an area of 64 in^2.
Points W, X, Y, and Z are midpoints.

Area of the ~~shaded~~ NONSHADED region = _____

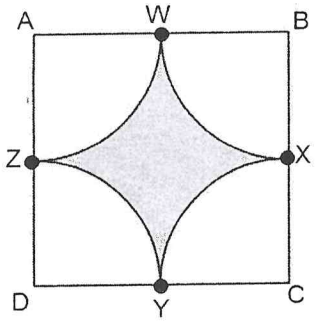


2. A square is inscribed in a circle. Find the exact area of the shaded region. Leave your answer in terms of π.



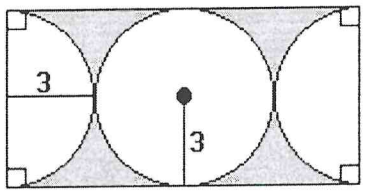
Area of the shaded region= _____

3. ABCD is a square. Points W, X, Y, and Z are midpoints. Find the percent of this figure that is shaded. Round to the nearest hundredth.
(hint: make the length of each side of the square 2x)



Percent of figure shaded = _____

4. Find the exact area of the shaded region. Give your answer in terms of π.



Area of shaded region = _____

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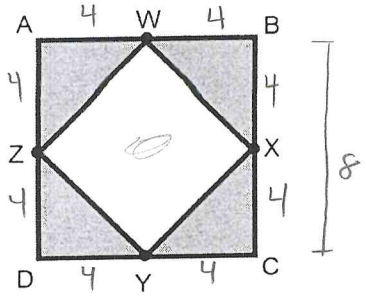
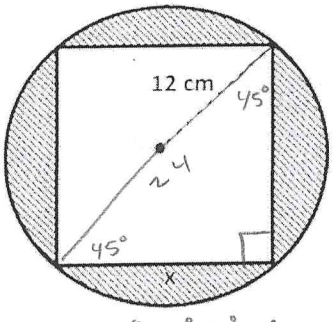


Area of the shaded region (NONSHADED) = 32 in^2

square − 4 Δ's:
64 in^2 − 32 in^2
= 32 in^2

Area of SQ = 64 in^2
Side of SQ = $\sqrt{64}$ = 8 in
Area of 1 Δ = $\frac{1}{2}(4)(4)$ = 8 in^2
Area of 4 Δ's = 4(8) = 32 in^2

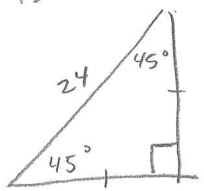
2. A square is inscribed in a circle. Find the exact area of the shaded region.
Leave your answer in terms of π.



Area of the shaded region = 144π − 288 cm

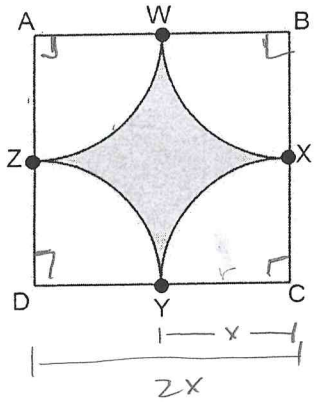
circle − square
$\pi(12)^2 - \left(\frac{24}{\sqrt{2}}\right)^2$
$= 144\pi - \frac{576}{2}$
$= 144\pi - 288$

45°-45°-90° Δ



$\frac{24}{\sqrt{2}}$ ← side of the square

3. ABCD is a square. Points W, X, Y, and Z are midpoints. Find the percent of this figure that is shaded. Round to the nearest hundredth.
(hint: make the length of each side of the square 2x)



Percent of figure shaded = 21.46 %

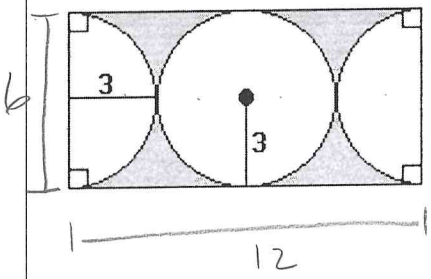
shaded area
= square − 1 circle
$(2x)^2 - \pi(x)^2$
$= 4x^2 - \pi x^2$

% shaded = $\frac{\text{shaded area}}{\text{TOTAL area}}$

$= \frac{4x^2 - \pi x^2}{4x^2}$

$= \frac{4 - \pi}{4} =$

4. Find the exact area of the shaded region. Give your answer in terms of π.



Area of shaded region = 72 − 18π

Rectangle − 2 circles
$= 6(12) - 2\pi(3)^2$
$= 72 - 18\pi$