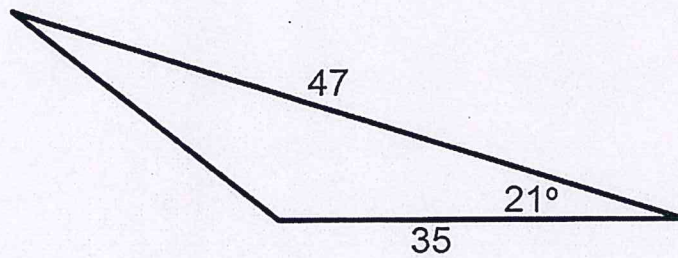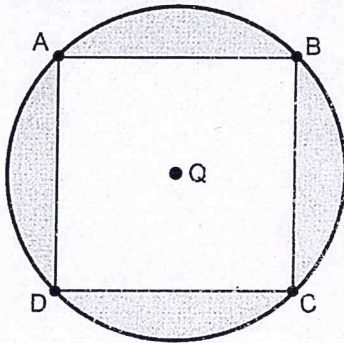1. Find the area of this triangle to the nearest hundredth.

47

21°

35

2. Find the area of the shaded region in the figure below. Square ABCD is inscribed in Circle Q. The perimeter of the square is 16 in. Round to the nearest tenth.

A   B

•Q

D   C

3. The function f is defined by $f(x) = 2b^x$, where b is a constant. The graph of f in the xy-plane passes through the point $(1,1)$. What is the value of $f(-1)$?
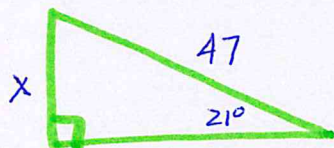A) −4   B) −1   C) 1   D) 4

1

1. Find the area of this triangle to the nearest hundredth.

$Area = \frac{1}{2}bh$

$= \frac{1}{2}(35)(16.84)$
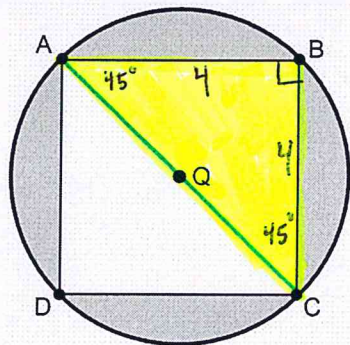
$A = 294.76$

using exact
value of
height

height

47

21°

35
base

X

47

21°

$\sin 21° = \frac{x}{47}$ $x = 16.84$

2. Find the area of the shaded region in the figure below. Square ABCD is inscribed in Circle Q. The perimeter of the square is 16 in. Round to the nearest tenth.

A   45°   4   B

Q

4

45°

D   C

SHADED REGION = Area of Circle – Area of square

SHADED AREA:

Circle – Sq

$= 8\pi - 16$

$= 9.1 \text{ in}^2$

Area of square $= (\text{side})^2$

perimeter $= 16 = 4(\text{side})$

side $= 4$

Area $= (4)^2 = 16$

Area of circle $= \pi r^2$

AC = diameter

radius $= AC \div 2 = 4\sqrt{2} \div 2 = 2\sqrt{2}$

Area $= \pi(2\sqrt{2})^2 = 8\pi$

A   45°   4

4

$4\sqrt{2}$

45

C

use 45-45-90
or pythagorean
theorem
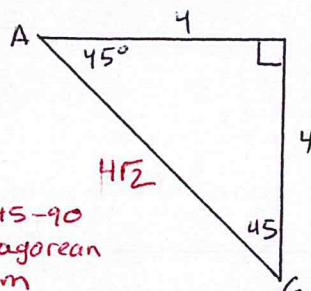
3. The function f is defined by $f(x) = 2b^x$, where b is a constant. The graph of f in the xy-plane passes through the point $(1,1)$. What is the value of $f(-1)$?

A) –4   B) –1   C) 1   D) 4

① $f(x) = 2b^x$

$y = 2b^x$

$1 = 2b^1$

$1 = 2b$

$b = \frac{1}{2}$

use the given
point $(1,1)$ to
x   y
find b

② EQ becomes

$f(x) = 2(\frac{1}{2})^x$

$f(-1) = 2(\frac{1}{2})^{-1}$

$= 2(\frac{2}{1})^1$

$= 2(2) = 4$

1