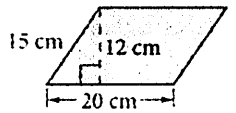
Area of Parallelograms, Rectangles, Squares and Triangles

1. Find Area.

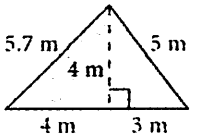


$A = b \cdot h$

$A = 12 \cdot 20$

$A = 240 \text{ cm}^2$

2. Find Area.

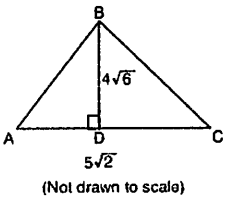


$A = \frac{1}{2} b \cdot h$

$A = \frac{1}{2}(7)(4)$

$A = 14 \text{ m}^2$

3. Find the area to the nearest tenth



$A = \frac{1}{2} b \cdot h$

$A = \frac{1}{2}(5\sqrt{2})(4\sqrt{6})$

$A = 10\sqrt{12}$

$A = 20\sqrt{3}$ or 34.6

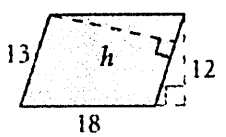
4. The perimeter of a square is 64 meters. Find the area of the square.

Side length $= 64 \div 4 = 16$

$A = s^2$

$A = 16^2 = 256 \text{ m}^2$

5. Solve for h.



$A = b \cdot h$

$A = 18 \cdot 12$

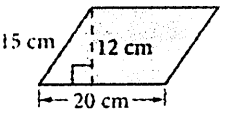
$A = 216$

$216 = 13 \cdot h$

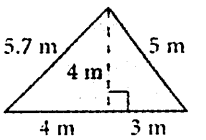
$h = 16.6$

Area of Parallelograms, Rectangles, Squares and Triangles

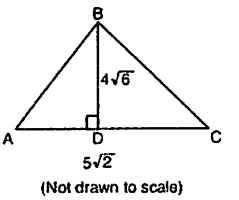
1. Find Area.



2. Find Area.

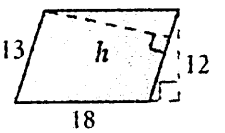


3. Find the area to the nearest tenth



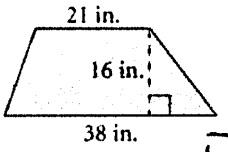
4. The perimeter of a square is 64 meters. Find the area of the square.

5. Solve for h.



Area of Trapezoids, Rhombus, and Kite

1. Find Area

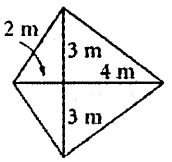


$A = \frac{1}{2} h (b_1 + b_2)$

$A = \frac{1}{2}(16)(21 + 38)$

$A = 472 \text{ in}^2$

2. Find Area

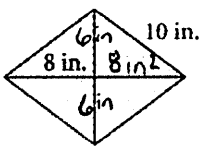


$A = \frac{1}{2} d_1 d_2$

$A = \frac{1}{2}(6)(6)$

$A = 18 \text{ m}^2$

3. Find Area



$A = \frac{1}{2} d_1 d_2$

$A = \frac{1}{2}(12)(16)$

$A = 96 \text{ in}^2$

$a^2 + b^2 = c^2$

$8^2 + b^2 = 10^2$

$64 + b^2 = 100$

$b^2 = 36 \quad b = 6$

4. The area of a kite is 120 cm². The length of one diagonal is 20 cm. What is the length of the other diagonal?

$A = \frac{1}{2} d_1 d_2$

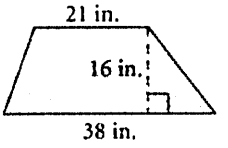
$120 = \frac{1}{2}(20)(d_2)$

$120 = 10 d_2$

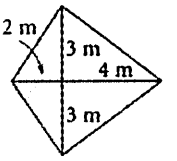
$12 = d_2$

Area of Trapezoids, Rhombus, and Kite

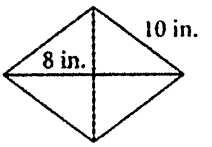
1. Find Area



2. Find Area



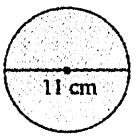
3. Find Area



4. The area of a kite is 120 cm². The length of one diagonal is 20 cm. What is the length of the other diagonal?

Area and Circumference of Circles

1. Find Area to the nearest tenth.

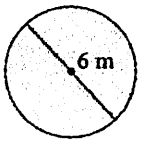


$A = \pi r^2$

$A = \pi(5.5)^2$

$A = 95.0\,cm^2$

2. Find Circumference to the nearest tenth



$C = \pi d$

$C = \pi(6)$

$C = 18.8\ m$

3. Find the area of a circle *in terms of* π that has a circumference of 18π.

$C = 2\pi r$

$\frac{18\pi}{2\pi} = \frac{2\pi r}{2\pi}$

$9 = r$

$A = \pi r^2$

$A = \pi(9)^2$

$A = 81\pi$

4. Find the circumference to the nearest tenth of a circle with the points (4, 6) and (–2, 9) as the endpoints of a diameter.

$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

$d = \sqrt{(4+2)^2 + (6-9)^2}$

$d = \sqrt{6^2 + (-3)^2}$

$d = \sqrt{45}$

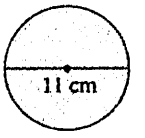
$C = \pi d$

$C = \pi(\sqrt{45})$

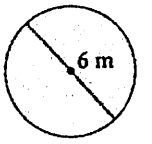
$C = 21.1$

Area and Circumference of Circles

1. Find Area to the nearest tenth.



2. Find Circumference to the nearest tenth

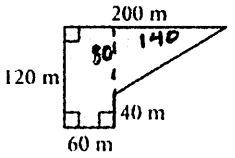


3. Find the area of a circle *in terms of* π that has a circumference of 18π.

4. Find the circumference to the nearest tenth of a circle with the points (4, 6) and (–2, 9) as the endpoints of a diameter.

Compositions of Parallelograms, Rectangles, Squares and Triangles

1. Find Area.



$A_{\square} + A_{\triangleright}$

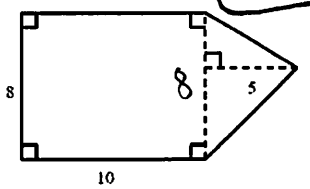
$A_{\square} = b \cdot h$ $\quad A_{\triangle} = \frac{1}{2} b \cdot h$

$A_{\square} = 60 \cdot 120$ $\quad A_{\triangle} = \frac{1}{2}(140)(80)$

$A_{\square} = 7200\,m^2$ $\quad A_{\triangle} = 5600\,m^2$

Total Area = $12800\,m^2$

2. Find Area.



$A_{\square} + A_{\triangleright}$

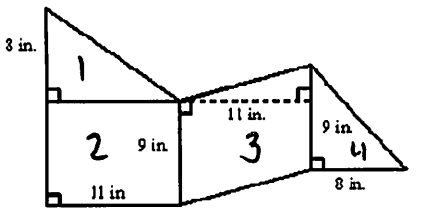
$A_{\square} = b \cdot h$ $\quad A_{\triangleright} = \frac{1}{2} bh$

$A_{\square} = 8 \cdot 10$ $\quad A_{\triangleright} = \frac{1}{2}(8)(5)$

$A_{\square} = 80$ $\quad A_{\triangleright} = 20$

Total Area = 100

3. Find the area to the nearest tenth



$A_1 = \frac{1}{2} bh$ $\quad A_2 = b \cdot h$ $\quad A_3 = b \cdot h$

$A_1 = \frac{1}{2}(11)(8)$ $\quad A_2 = 11 \cdot 9$ $\quad A_3 = 9 \cdot 11$

$A_1 = 44\,in^2$ $\quad A_2 = 99\,in^2$ $\quad A_3 = 99\,in^2$

$A_4 = \frac{1}{2} b \cdot h$

$A_4 = \frac{1}{2}(9)(8)$

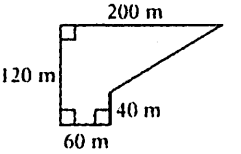
$A_4 = 36\,in^2$

Total Area

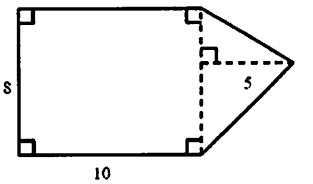
278 in^2

Compositions of Parallelograms, Rectangles, Squares and Triangles

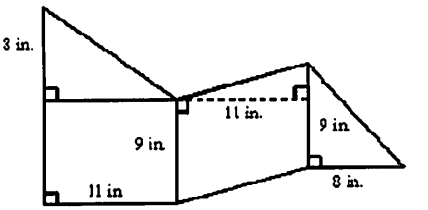
1. Find Area.



2. Find Area.

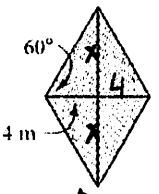


3. Find the area to the nearest tenth



Compositions of Trapezoids, Rhombus, and Kite

1. Find the Area to *the nearest tenth.*



$A = \frac{1}{2} d_1 d_2$

$A = \frac{1}{2}(13.856)(8)$

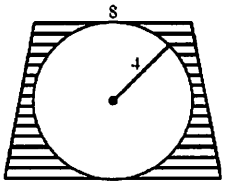
$\tan\theta = \frac{O}{A}$

$\tan 60 = \frac{x}{4}$

$x = 6.928\ m$

$A = 55.4\ m^2$

2. Find the Area of the shaded region.



$A_{Trap} - Area_O$

$A_T = \frac{1}{2} h(b_1 + b_2)$

$A_T = \frac{1}{2} 8(8 + 11)$

$A_T = 76$

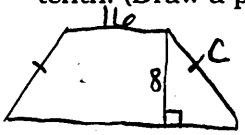
$A_O = \pi r^2$

$A_O = \pi 4^2$

$A_O = 16\pi$ or 52.3

Shaded Area = $76 - 16\pi$ or 25.7

3. The area of an isosceles trapezoid is 274 in². Its height is 8 in. and the length of its shorter base is 16 in. Find the length of its legs to the nearest tenth. (Draw a picture)



① Find Longer Leg

$A = \frac{1}{2} h(b_1 + b_2)$

$274 = \frac{1}{2}(8)(16 + b_2)$

$274 = 4(16 + b_2)$

$274 = 64 + 4b_2$

$b_2 = 52.5$ in

② Find missing leg of rt Δ

$52.5 - 16 = \frac{36.5}{2}$

$= 18.25$

③ Pythag Theorem

$a^2 + b^2 = c^2$

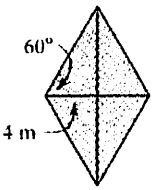
$8^2 + 18.25^2 = c^2$

$c^2 = 397.0625$

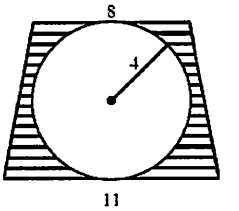
$c = 19.9$ in *

Compositions of Trapezoids, Rhombus, and Kite

1. Find the Area to *the nearest tenth.*



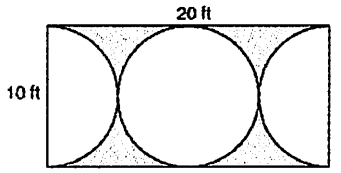
2. Find the Area of the shaded region.



3. The area of an isosceles trapezoid is 274 in². Its height is 8 in. and the length of its shorter base is 16 in. Find the length of its legs to the nearest tenth. (Draw a picture)

Compositions of Circles and Other Polygons

1. Find the area of the shaded region.



$A_{\square} - A_{O's}$

$r = 5$

2 full circles

$A_{\square} = b \cdot h$

$A_{\square} = 10 \cdot 20$

$A_{\square} = 200\ ft^2$

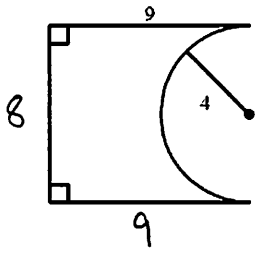
$A_O = \pi r^2$

$A_O = \pi 5^2$

$A_O = 78.5\ ft^2$

Shaded Area = $200 - 78.5 - 78.5 = 42.9\ ft^2$

2. Find the Perimeter of the figure to the *nearest tenth.*



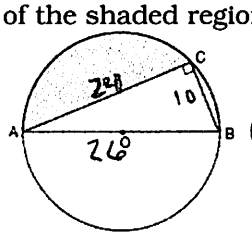
$C_{\frac{1}{2}O} = \frac{\pi d}{2}$

$C_{\frac{1}{2}O} = \frac{\pi 8}{2}$

$C_{\frac{1}{2}O} = 12.6$

Perimeter = $9 + 8 + 9 + 12.6 = 38.6$

3. In the accompanying diagram, right triangle *ABC* is inscribed in circle *O*, diameter *AB* = 26, and *CB* = 10. Find, to the *nearest square unit*, the area of the shaded region.



$A_{\frac{1}{2}O}$ − Area Triangle

① Find AC

$a^2 + b^2 = c^2$ | $b = 24$

$10^2 + b^2 = 26^2$

$A_{\frac{1}{2}O} = \frac{\pi r^2}{2}$

$A_{\frac{1}{2}O} = \frac{\pi 13^2}{2}$

$A_{\frac{1}{2}O} = 266$

$A_{Tri} = \frac{1}{2}bh$

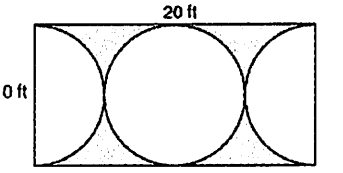
$A_T = \frac{1}{2}(24)(10)$

$A_T = 120$

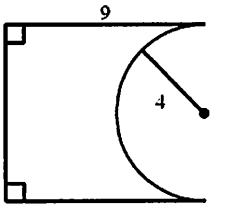
Shaded Area = 146

Compositions of Circles and Other Polygons

1. Find the area of the shaded region.



2. Find the Perimeter of the figure to the *nearest tenth.*



3. In the accompanying diagram, right triangle *ABC* is inscribed in circle *O*, diameter *AB* = 26, and *CB* = 10. Find, to the *nearest square unit*, the area of the shaded region.