

Area 3.2
Geometry

(KEY)

Find the missing measures in the shapes below to the nearest tenth.

1) Parallelogram	2) Triangle
base = 245 cm	base = 31 in
height = 419 cm	height = 119 in
Area = $b \times h$	Area = $(b \times h)/2$
Area = $(245 \text{ cm})(419 \text{ cm})$	Area = $(31 \text{ in})(119 \text{ in})/2$
Area = $102,655 \text{ cm}^2$	Area = $1,844.5 \text{ in}^2$

3) Triangle	4) Rectangle
base = 214 mm	base =
height =	height = 67 ft
Area = $9,416 \text{ mm}^2$	Area = $5,092 \text{ ft}^2$
$9416 \text{ mm}^2 = (214 \text{ mm})(h)/2$	$5092 \text{ ft}^2 = (b)(67 \text{ ft})$
$214 \text{ mm} \quad 214 \text{ mm} \quad 67 \text{ ft} \quad 67 \text{ ft}$	
$(2)44 \text{ mm} = (h/2)2$	$76 \text{ ft} = b$
$88 \text{ mm} = h$	

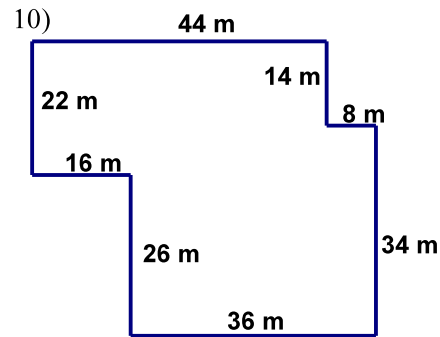
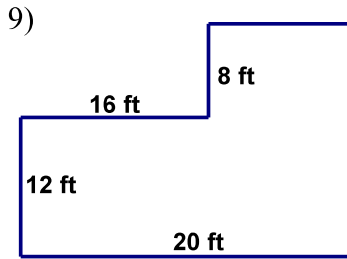
5) If a rectangle has $A = 32 \text{ yd}^2$, name three possible sets of dimensions. $1 \text{ yd} \times 32 \text{ yd}$, $2 \text{ yd} \times 16 \text{ yd}$, $4 \text{ yd} \times 8 \text{ yd}$

6) If a rectangle has $A = 36 \text{ ft}^2$, give three possible perimeters. 74 ft , 40 ft , 26 ft , 24 ft .

7) Name the dimensions of the square or rectangle with $A = 16 \text{ m}^2$, $P = 20 \text{ m}$. $8 \text{ m} \times 2 \text{ m}$

8) Name the dimensions of the square or rectangle with $A = 40 \text{ in}^2$, $P = 26 \text{ in}$. $5 \text{ in} \times 8 \text{ in}$

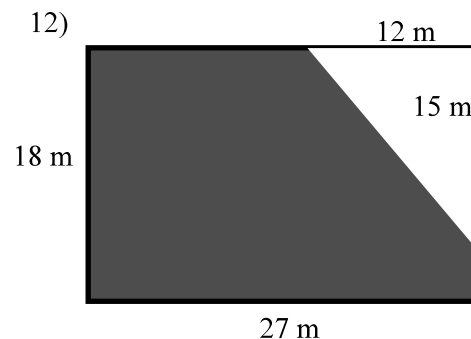
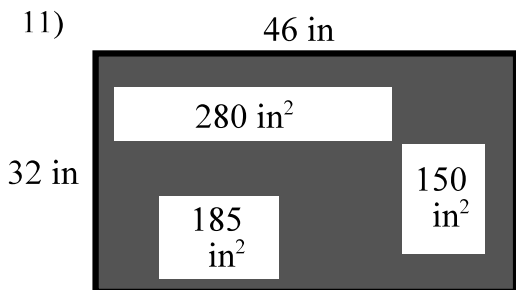
Find the area of each figure.



Area = $(16 \text{ ft})(12 \text{ ft}) + (20-16 \text{ ft})(12+8 \text{ ft})$
 Area = $192 \text{ ft}^2 + (4 \text{ ft})(20 \text{ ft})$
 Area = $192 \text{ ft}^2 + 80 \text{ ft}^2$
 Area = 272 ft^2

Area = $(44 \text{ m})(22 \text{ m}) + (8 \text{ m})(34 \text{ m}) + (36-8 \text{ m})(26 \text{ m})$
 Area = $968 \text{ m}^2 + 272 \text{ m}^2 + (28 \text{ m})(26 \text{ m})$
 Area = $968 \text{ m}^2 + 272 \text{ m}^2 + 728 \text{ m}^2$
 Area = $1,968 \text{ m}^2$

Find the area of the shaded region.



Whole shape = $32 \text{ in} (46 \text{ in})$
 = $1,472 \text{ in}^2$
 - 280 in^2
 - 185 in^2
 - 150 in^2
 = 857 in^2 is the shaded area

Whole shape = $18 \text{ m} (27 \text{ m})$
 = 486 m^2
 Unshaded Triangle = $\frac{12 \text{ m} (15 \text{ m})}{2} = 90 \text{ m}^2$
 Shaded Area = $486 \text{ m}^2 - 90 \text{ m}^2 = 396 \text{ m}^2$

13) Maria and Ricky are wallpapering a wall in their living room. The wall is 8 ft tall, and 12 ft long.

a. What is the area of the wall?

$$(8 \text{ ft})(12 \text{ ft}) = 96 \text{ ft}^2$$

b. How much wallpaper will they need to cover the wall?

$$96 \text{ ft}^2$$

c. Their favorite wallpaper costs \$2 per square foot. How much will the wallpaper cost at that price?

$$(96 \text{ ft}^2)(\$2.00) = \$192 \text{ total}$$

d. What would they pay for wallpaper that costs \$1.50 per square foot?

$$(96 \text{ ft}^2)(\$1.50) = \$144 \text{ total}$$

14) Sharon is making a quilt out of squares of fabric that measures 80 in. by 60 in. Each square of fabric measures 16 in².

a. What is the area of the quilt?

$$(80 \text{ in})(60 \text{ in}) = 4800 \text{ in}^2$$

b. What is the area of each square?

$$16 \text{ in}^2$$

c. How many squares will be needed to make the quilt?

$$4800 \text{ in}^2 \div 16 \text{ in}^2 = 300 \text{ squares}$$

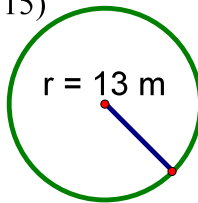
d. How much will Sharon spend if each square costs \$0.12? What if they each cost \$0.19?

$$300 \text{ squares} (\$0.12) = \$36.00 \text{ OR}$$

$$300 \text{ squares} (\$0.19) = \$57.00$$

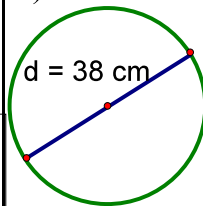
Find the area of each circle below in terms of pi and to the nearest tenth.

15)



$$\begin{aligned} A &= \pi r^2 \\ &= \pi(13 \text{ m})^2 \\ &= \pi(169 \text{ m}^2) \\ A &= 169\pi \text{ m}^2 \\ A &= 530.9 \text{ m}^2 \end{aligned}$$

16)



$$\begin{aligned} A &= \pi r^2 \\ &= \pi(19 \text{ m})^2 \\ &= \pi(361 \text{ m}^2) \\ A &= 361\pi \text{ m}^2 \\ A &= 1,134.1 \text{ m}^2 \end{aligned}$$

17) $r = 7 \text{ in}$

18) $r = 14 \text{ mm}$

$$\begin{aligned} A &= \pi r^2 \\ &= \pi(14 \text{ m})^2 \\ &= \pi(196 \text{ m}^2) \end{aligned}$$

$$\begin{aligned} A &= 196\pi \text{ m}^2 \\ A &= 615.8 \text{ m}^2 \end{aligned}$$

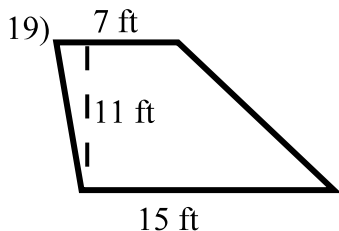
19) $d = 54 \text{ ft}$

20) $r = 9 \text{ yds}$

$$\begin{aligned} A &= \pi r^2 \\ &= \pi(9 \text{ yds})^2 \\ &= \pi(81 \text{ yds}^2) \end{aligned}$$

$$\begin{aligned} A &= 81\pi \text{ yds}^2 \\ A &= 254.5 \text{ yds}^2 \end{aligned}$$

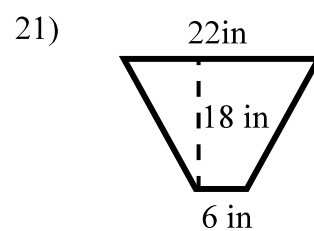
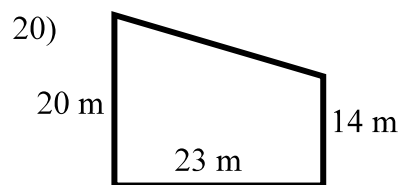
Find the area of each trapezoid.



$$A = \frac{(b_1 + b_2)h}{2} = \frac{(7 \text{ ft} + 15 \text{ ft})11 \text{ ft}}{2}$$

$$A = \frac{(22 \text{ ft})11 \text{ ft}}{2} = \frac{242 \text{ ft}^2}{2}$$

$$A = 121 \text{ ft}^2$$



$$A = \frac{(b_1 + b_2)h}{2} = \frac{(22 \text{ in} + 6 \text{ in})18 \text{ in}}{2}$$

$$A = \frac{(28 \text{ in})18 \text{ in}}{2} = \frac{504 \text{ in}^2}{2}$$

$$A = 252 \text{ in}^2$$

