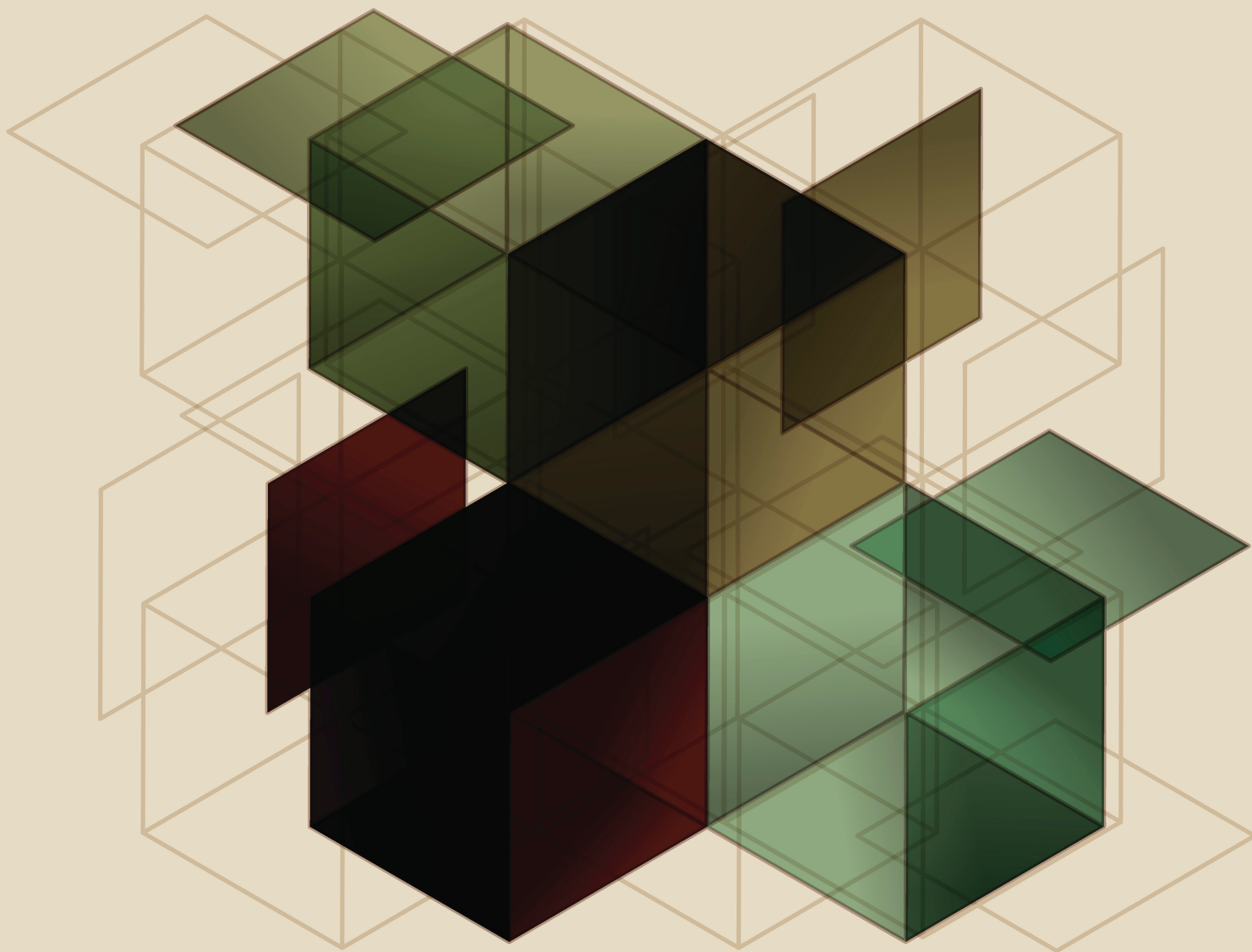


# Upper Elementary Geometry



## Area of Figures Task Cards

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## **Other Available ETC Montessori Geometry Materials**

### **Lower Elementary**

1st Level Geometry Task Cards with Chart  
2nd & 3rd Level Geometry Task Cards  
Geometry Nomenclature Complete Solution  
Lower Elementary Attribute Work with Task Cards  
Square Root Patterns

### **Upper Elementary**

Constructing 3D Archimedean Solids  
Constructing 3D Compound Polyhedra  
Constructing 3D Kepler-Poinsot Polyhedra  
Constructing 3D Platonic Solids  
Constructing 3D Pyramids  
Constructing 3D Uniform Polyhedra  
Geometry with Tangrams and Pattern Blocks  
Deriving the Area of Geometric Figures  
Understanding Geometric Constructions  
Upper Elementary Attribute Task Cards  
Upper Elementary Area Task Cards  
Upper Elementary Volume Task Cards  
Upper Elementary Geometry Task Cards

## Answer Key

### Area of Rectangle:

<b>Card 1:</b>	20 ft. Area	15 ft. $A=bh$	Not Known 201
<b>Card 2:</b>	10m Area	8m $A=bh$	Not Known Base
<b>Card 3:</b>	12ft Height	Not Known $H=a/b$	72sqft Area
<b>Card 4:</b>	10cm Area	5cm $A=bh$	Not Known Height
<b>Card 5:</b>	22ft Area	20ft $A=bh$	Not Known 300 tiles
<b>Card 6:</b>	12ft Height	Not Known $H = \frac{a}{b}$	156 sq. ft Area
<b>Card 7:</b>	3cm Area	7cm $A=bh$	not known 36
<b>Card 8:</b>	3ft Area	4ft $A=bh$	not known 460
<b>Card 9:</b>	5 Height	Not Known $H = \frac{a}{b}$	100 sq.ft Base
<b>Card 10:</b>	10ft Area	8ft $A=bh$	Not Known 250 sq ft
<b>Card 11:</b>	8in Area	60in $A=bh$	not known $h=a/b$
<b>Card 12:</b>	22ft Height	Not Known $H = \frac{a}{b}$	300 sq. ft Base

## Area of Parallelograms:

<b>Card 1:</b>	36in Area	42in $A=bh$	Not Known 3ft
<b>Card 2:</b>	<i>Answers vary depending on source of blocks</i> Area	$A=bh$	Not Known 4
<b>Card 3:</b>	12ft Height	Not Known $H = \frac{a}{b}$	84 sq. ft Base
<b>Card 4:</b>	8cm Area	6cm $A=bh$	Not Known Height
<b>Card 5:</b>	18cm Area	14cm $A=bh$	Not Known Base
<b>Card 6:</b>	6ft Height	Not Known $H = \frac{a}{b}$	24 sq. ft Area
<b>Card 7:</b>	20ft Area	15ft $A=bh$	Not Known Base
<b>Card 8:</b>	10m Area	8m $A=bh$	Not Known Base
<b>Card 9:</b>	Not Known Base	38in $H = \frac{a}{b}$	2280 sq. ft $H = \frac{a}{b}$
<b>Card 10:</b>	9in Area	6in $A=bh$	Not Known $H = \frac{a}{b}$
<b>Card 11:</b>	26ft Area	32ft $A=bh$	Not Known 21
<b>Card 12:</b>	Not Known Base	16ft $B = \frac{a}{h}$	480 sq. ft $H = \frac{a}{b}$

## Area of a Square:

<b>Card 1:</b>	10cm Area	10cm $A=bh$	Not Known $A=s^2$
<b>Card 2:</b>	<i>Answers vary depending on unit board</i> Area	$A=s^2$	Not Known $A=bh$
<b>Card 3:</b>	<i>Answers vary depending on objects used</i> Area	$A=s^2$	Not Known 4
<b>Card 4:</b>	Not Known Side	Not Known $\sqrt{s}$	121ft $A=bh$
<b>Card 5:</b>	10cm Area	10cm $A=s^2$	Not Known $B=a/h$
<b>Card 6:</b>	7ft Area	7ft $A=s^2$	Not Known $H = \frac{a}{b}$
<b>Card 7:</b>	90ft Area	90ft $A=s^2$	Not Known $A=bh$
<b>Card 8:</b>	Not Known Side	Not Known $A=\sqrt{s}$	$25\text{cm}^2$ 8 square
<b>Card 9:</b>	10in Area	10in $A=s^2$	Not Known $H=a/b$
<b>Card 10:</b>	12ft Area	12ft $A=s^2$	not known $A=bh$
<b>Card 11:</b>	not known Side	not known $\sqrt{25}$	$25\text{cm}^2$ $A=bh$
<b>Card 12:</b>	$9\frac{1}{2}$ Area	$9\frac{1}{2}$ $A=s^2$	Not Known $B = \frac{a}{h}$

## Area of a Triangle:

<b>Card 1:</b>	<i>Answers Vary depending on Objects used</i>		Not Known
	Area	$A = \frac{b*h}{2}$	Base
<b>Card 2:</b>	16ft	32ft	Not Known
	Area	$A = \frac{b*h}{2}$	30ft
<b>Card 3:</b>	2ft	3ft	Not Known
	Area	$A = \frac{b*h}{2}$	Height
<b>Card 4:</b>	91cm	60cm	Not Known
	Area	$A = \frac{b*h}{2}$	4
<b>Card 5:</b>	10m	8m	Not Known
	Area	$A = \frac{b*h}{2}$	A=bh
<b>Card 6:</b>	7cm	10cm	Not Known
	Area	$A = \frac{b*h}{2}$	Height
<b>Card 7:</b>	4in	6in	Not Known
	Area	$A = \frac{b*h}{2}$	Height
<b>Card 8:</b>	14m	8m	Not Known
	Area	$A = \frac{b*h}{2}$	Base
<b>Card 9:</b>	12ft	6ft	Not Known
	Area	$A = \frac{b*h}{2}$	2
<b>Card 10:</b>	2ft	2ft	Not Known
	Area	$A = \frac{b*h}{2}$	Base
<b>Card 11:</b>	8in	4in	Not Known
	Area	$A = \frac{b*h}{2}$	8in
<b>Card 12:</b>	15in	15in	Not Known
	Area	$A = \frac{b*h}{2}$	7.5in

## Area of a Rhombus

<b>Card 1:</b>	<b>Answers vary on Objects being used</b>		Not Known
	Area	$A = \frac{Dd}{2}$	Base
<b>Card 2:</b>	<b>Answers vary in Objects being used</b>		Not Known
	Area	$A = \frac{Dd}{2}$	Length of Sides
<b>Card 3:</b>	8in	10in	Not Known
	Area	$A = \frac{Dd}{2}$	6in
<b>Card 4:</b>	30cm	60cm	900cm <sup>2</sup>
	Long Diagonal	$\frac{900 \times 2}{30}$	altitude
<b>Card 5:</b>	4ft	6ft	12ft <sup>2</sup>
	Short Diagonal	$\frac{12 \times 2}{6}$	8ft
<b>Cards 6:</b>	<b>Answers vary on Objects being used</b>		Not Known
	Area	$A = \frac{Dd}{2}$	Side <sup>2</sup>
<b>Card 7:</b>	4ft	6ft	Not Known
	Area	$A = \frac{Dd}{2}$	$A = \frac{D}{2} d$
<b>Card 8:</b>	Not Known	30ft	300ft <sup>2</sup>
	Short Diagonal	$\frac{Area \times 2}{D}$	$A = \frac{Dd}{2}$
<b>Card 9:</b>	2m	3m	Not Known
	Area	$A = \frac{Dd}{2}$	$H = \frac{a}{b}$
<b>Card 10:</b>	Not Known	4m	6m <sup>2</sup>
	Short Diagonal	$\frac{Area \times 2}{D}$	A=bh
<b>Card 11:</b>	24in	16in	Not Known
	Area	$A = \frac{Dd}{2}$	\$ 17.95
<b>Card 12:</b>	3ft	5ft	Not Known
	Number of Sandbags	$A = \frac{Dd}{2}$	\$ 2.95



## Area of a Kite:

<b>Card 1:</b>	<b>Answers Vary on Objects being used</b>		Not Known
	Area	$A = \frac{Dd}{2}$	$A = s^2$
<b>Card 2:</b>	<b>Answers vary on Objects being used</b>		Not Known
	Area	$A = \frac{Dd}{2}$	$A = bh$
<b>Card 3:</b>	65cm	80cm	Not Known
	Area	$A = \frac{Dd}{2}$	$\frac{A}{b} = h$
<b>Card 4:</b>	Not Known	16in	$72\text{in}^2$
	Short Diagonal	$\frac{72 \times 2}{16}$	$A = \frac{Dd}{2}$
<b>Card 5:</b>	<b>Answers vary on Objects being used</b>		Not Known
	Area	$A = \frac{Dd}{2}$	$A = s^2$
<b>Card 6:</b>	3.5m	Not Known	$8.75\text{m}^2$
	Long Diagonal	$\frac{8.75 \times 2}{3.5}$	$A = \frac{Dd}{2}$
<b>Card 7:</b>	<b>Answers vary on Objects being used</b>		not known
	Area	$A = \frac{Dd}{2}$	$D = \frac{2A}{d}$
<b>Card 8:</b>	Not Known	$4\frac{1}{2}\text{ft}$	$13\frac{1}{2}\text{ft}$
	Short Diagonal	$d = \frac{2A}{D}$	$A = \frac{Dd}{2}$
<b>Card 9:</b>	75m	Not Known	$3250\text{m}^2$
	Long Diagonal	$D = \frac{2A}{d}$	$h = \frac{A}{b}$
<b>Card 10:</b>	73ft	112ft	Not Known
	Area	$A = \frac{Dd}{2}$	$D = da$
<b>Card 11:</b>	<b>Answers Vary on Objects being used</b>		Not Known
	Area	$A = \frac{Dd}{2}$	$A = bh$
<b>Card 12:</b>	Not Known	9in	Not Known
	Area	$2(24\text{in}^2) + \frac{bh}{2}$	$A = \frac{Dd}{2}$

## Area of a Trapezium

<b>Card 1:</b>	<b>Answers Vary on Objects being used</b>		Not Known
	Area	$A = \frac{(B+b)h}{2}$	7cm
<b>Card 2:</b>	<b>Answers Vary on Objects being used</b>		
	Area	$A = \frac{(B+b)h}{2}$	Not Known
<b>Card 3:</b>	7in Height	10in $h = \frac{2A}{(B+b)}$	Not Known 17in <sup>2</sup>
<b>Card 4:</b>	2ft Area	4ft $A = \frac{(B+b)h}{2}$	3ft Not Known
<b>Card 5:</b>	$\frac{3}{4}$ of 8 Area	8in $A = \frac{(B+b)h}{2}$	$\frac{1}{2}$ of 8 Not Known
<b>Card 6:</b>	3ft Height	6ft $h = \frac{2A}{(B+b)}$	Not Known 36ft
<b>Card 7:</b>	3ft Area	5ft $A = \frac{(B+b)h}{2}$	2ft Not Known
<b>Card 8:</b>	5cm Area	11cm $A = \frac{(B+b)h}{2}$	29cm Not Known
<b>Card 9:</b>	30ft Height	50ft $H = \frac{2A}{(B+b)}$	Not Known 1000 sq. ft
<b>Card 10:</b>	16ft Area	23ft $A = \frac{(B+b)h}{2}$	12ft Not Known
<b>Card 11:</b>	7in Area	5in $A = \frac{(B+b)h}{2}$	6in Not Known
<b>Card 12:</b>	11ft	5ft	6ft

Area

$$A = \frac{(B+b)h}{2}$$

Not Known

## Area of a Quadrilateral

<b>Card 1:</b>	<i>Answers Vary on Objects being used</i>		Not Known
	Area	$A = A\Delta 1 + A\Delta 2$	Major Base
<b>Card 2:</b>	$16\text{cm}^2$	$5\text{cm}^2$	Not Known
	Area	$A = A\Delta 1 + A\Delta 2$	Base
<b>Card 3:</b>	$48\text{cm}^2$	$18\text{cm}^2$	$66\text{cm}^2$
	$A\Delta 1$	$A = A\Delta 1 - A\Delta 2$	Height
<b>Card 4:</b>	$1,000\text{m}$	$125,000\text{m}$	Not Known
	Area	$A = A\Delta 1 + A\Delta 2$	$240,000\text{m}^2$
<b>Card 5:</b>	$6\text{cm}^2$	Not Known	$14\text{cm}^2$
	$A\Delta 2$	$A = A\Delta 1 - A\Delta 2$	Hypotenuse
<b>Card 6:</b>	$12\text{ft}^2$	$8\text{ft}^2$	Not Known
	Area	$A = A\Delta 1 + A\Delta 2$	24ft
<b>Card 7:</b>	$\frac{165 \times 124}{2}$	$\frac{149 \times 184}{2}$	Not Known
	Area	$A = A\Delta 1 + A\Delta 2$	$\frac{165 \times 184}{2}$
<b>Card 8:</b>	$\frac{8 \times 12}{2}$	Not Known	$216\text{ft}^2$
	$A\Delta 2$	$A - A\Delta 1 = A\Delta 2$	$\frac{216}{12}$
<b>Card 9:</b>	$\frac{16 \times 18}{2}$	$\frac{26 \times 14}{2}$	Not Known
	Area	$A = A\Delta 1 + A\Delta 2$	$\frac{16 \times 14}{2}$

## Area of Regular Polygon:

<b>Card 1:</b>	<b>Answers vary on Objects used</b>		Not Known
	Area	$A = \frac{Pa}{2}$	$A = \frac{3(bh)}{2}$
<b>Card 2:</b>	<b>Answers vary on Objects used</b>		Not Known
	Area	$A = \frac{Pa}{2}$	$A = bh$
<b>Card 3:</b>	6 x 10cm	10cm	Not Known
	Area	$A = \frac{Pa}{2}$	$\frac{A}{b} = h$
<b>Card 4:</b>	96in	Not Known	$672\text{in}^2$
	Apothem	$\frac{2(672)}{96}$	$\frac{2(96)}{272}$
<b>Card 5:</b>	8(24in)	20in	Not Known
	Area	$A = \frac{Pa}{2}$	144in
<b>Card 6:</b>	Not Known	$\frac{8ft}{2}$	$96\text{ft}^2$
	Perimeter	$\frac{2(96)}{2}$	$A = \frac{Pa}{2}$
<b>Card 7:</b>	$2\frac{1}{2}$ city blocks	1 city block	Not Known
	Area	$A = \frac{Pa}{2}$	1(5)
<b>Card 8:</b>	75cm	Not Known	$225\text{cm}^2$
	Apothem	$a = \frac{2A}{P}$	$A = bh$
<b>Card 9:</b>	24cm	2.9cm	Not Known
	Area	$A = \frac{Pa}{2}$	$P = \frac{A}{2}$
<b>Card 10:</b>	9(24cm)	Not Known	$1728\text{cm}^2$
	Apothem	$a = \frac{2A}{P}$	9 equilateral triangles
<b>Card 11:</b>	8ft x 6	5ft	Not Known
	Area	$A = \frac{Pa}{2}$	$A = bh$
<b>Card 12:</b>	Not Known	4ft	$84\text{ft}^2$
	Perimeter	$P = \frac{2A}{a}$	$\frac{A}{b} = h$

### Circumference of a Circle:

<b>Card 1:</b>	3.14 Circumference	5cm $C=\pi d$	Not Known Radius
<b>Card 2:</b>	3.14 Circumference	8 $C=\pi d$	Not Known Apothem
<b>Card 3:</b>	Not Known Circumference	25cm $C=\pi d$	3.14 2cm
<b>Card 4:</b>	Not Known Circumference	22in $2\pi r$	3.14 120ft
<b>Card 5:</b>	Not Known Circumference	6ft $2\pi r$	3.14 22 Children
<b>Card 6:</b>	Not Known Circumference	27in $2\pi r$	3.14 $\frac{A}{b} = h$
<b>Card 7:</b>	81.64 Radius	Not Known $\frac{C}{2\pi} = R$	3.14 $2\pi r$
<b>Card 8:</b>	1884ft Radius	Not Known $\frac{C}{2\pi} = R$	3.14 26 miles
<b>Card 9:</b>	27.93cm Radius	Not Known $\frac{C}{2\pi} = R$	3.14 43.96cm

## Area of a Circle:

<b>Card 1:</b>	<b>Varies</b> Area	Not Known $A = \frac{Cr}{2}$	<b>Varies</b> $A=bh$
<b>Card 2:</b>	9.43m Area	Not Known $A = \frac{Cr}{2}$	1.5m $\pi$
<b>Card 3:</b>	24.12ft Area	Not Known $A = \frac{Cr}{2}$	4ft 3.14
<b>Card 4:</b>	$2\pi r$ Area	Not Known $A = \frac{Cr}{2}$	20cm $A=bh$
<b>Card 5:</b>	94.2cm Radius	706.5 $r = \frac{2A}{C}$	Not Known $D\pi$
<b>Card 6:</b>	113.04in Area	Not Known $A = \frac{Cr}{2}$	18in $A = \frac{2r}{C}$
<b>Card 7:</b>	3.14 Area	Not Known $2\pi r^2$	20in $A = \frac{2r}{C}$
<b>Card 8:</b>	3.14 Area	Not Known $\pi r^2$	8cm $2\pi r$
<b>Card 9:</b>	3.14 Area	Not Known $\pi r^2$	1.5m $C=D\pi$

## Area of a Sector:

<b>Card 1:</b>	Not Known $A_{\text{sector}}$	$\frac{8(\pi)}{2}$ $A_{\text{sector}} = \frac{lr}{2}$	$\frac{8}{2}$ $A=bh$
<b>Card 2:</b>	Not Known $A_{\text{sector}}$	$9\pi \div \frac{1}{4}$ $A_{\text{sector}} = \frac{lr}{2}$	$9/2$ $9\pi \div \frac{3}{4}$
<b>Card 3:</b>	Not Known $A_{\text{sector}}$	$9\pi \div \frac{3}{4}$ $A_{\text{sector}} = \frac{lr}{2}$	$9/2$ $9\pi \div \frac{1}{4}$
<b>Card 4:</b>	Not Known $A_{\text{sector}}$	$4\left(\frac{14\pi}{12}\right)$ $A_{\text{sector}} = \frac{lr}{2}$	$14/2$ $A=bh$
<b>Card 5:</b>	Not Known $A_{\text{sector}}$	$\frac{56.52}{5}$ $A_{\text{sector}} = \frac{lr}{2}$	$\frac{56.52}{2\pi}$ $56.52$
<b>Card 6:</b>	Not Known $A_{\text{sector}}$	$3\left(\frac{10\pi}{4}\right)$ $A_{\text{sector}} = \frac{lr}{2}$	$10/2$ $A = \frac{Cr}{2}$
<b>Card 7:</b>	$\frac{8.5}{2}$ $A_{\text{sector}}$	Not Known $A_{\text{sector}} = \frac{lr}{2}$	$\frac{8.5\pi}{2}$ $\pi r^2$
<b>Card 8:</b>	$\frac{16}{2}$ $A_{\text{sector}}$	Not Known $A_{\text{sector}} = \frac{lr}{2}$	$\frac{16\pi}{2}$ $\pi r^2$



## Area of Major/Minor Segment

<b>Card 1:</b>	Not Known	5.5cm	3cm
	Area of Major Segment	$A = \frac{lr+kh}{2}$	$A = \frac{lr-kh}{2}$
<b>Card 2:</b>	Not Known	5.5cm	3cm
	Area of Minor Segment	$A = \frac{lr-kh}{2}$	$A = \frac{lr+kh}{2}$
<b>Card 3:</b>	Not Known	<b>Answers Vary on Objects used</b>	
	Area of Major Segment	$A = \frac{lr-kh}{2}$	$A = \frac{lr+kh}{2}$
<b>Card 4:</b>	Not Known	7.07cm	5cm
	Area of Minor Segment	$A = \frac{lr-kh}{2}$	$A = \frac{lr+kh}{2}$
<b>Card 5:</b>	Not Known	5cm	$A = \frac{lr+kh}{2}$
	Area of Major Segment	7.07cm	$A = \frac{lr-kh}{2}$
<b>Card 6:</b>	Not Known	7.6in	$A = \frac{lr-kh}{2}$
	Area of Minor Segment	5in	$A = \frac{lr+kh}{2}$
<b>Card 7:</b>	Not Known	10cm	$A = \frac{lr+kh}{2}$
	Area of Major Segment	8cm	$A = \frac{lr-kh}{2}$
<b>Card 8:</b>	Not Known	4cm	$A = \frac{lr+kh}{2}$
	Area of Major Segment	6cm	$A = \frac{lr-kh}{2}$

## Area of an Annulus:

<b>Card 1:</b>	Not Known A annulus	<b>Varies</b> $A=\pi(R^2-r^2)$	<b>Varies</b> $A=bh$
<b>Card 2:</b>	Not Known A annulus	$\frac{4}{2}$ $A=\pi(R^2-r^2)$	$\frac{1}{2}$ $R^2$
<b>Card 3:</b>	Not Known A annulus	$\frac{60}{2}$ $A=\pi(R^2-r^2)$	15 $A=bh$
<b>Card 4:</b>	$188.4\text{in}^2$ Radius of Large Circle	Not Known $R^2\frac{Aa+r^2}{\pi}$	$\frac{2}{2}$ $A=\pi(R^2-r^2)$
<b>Card 5:</b>	Not Known A annulus	5cm $A=\pi(R^2-r^2)$	2.5cm $\frac{5\pi}{2}$
<b>Card 6:</b>	Not Known A annulus	$\frac{11.5}{2}$ $A=\pi(R^2-r^2)$	$\frac{1.5}{2}$ $A=\frac{Cr}{2}$
<b>Card 7:</b>	Not Known A annulus	$\pi r^2$ $A=\pi(R^2-r^2)$	$\frac{12}{2}$ $\frac{2.5}{\pi}$
<b>Card 8:</b>	Not Known A annulus	$\frac{3}{2}$ $A=\pi(R^2-r^2)$	$\frac{2}{2}$ 3.14
<b>Card 9:</b>	Not Known A annulus	$\frac{2.5}{2}$ $A=\pi(R^2-r^2)$	$\frac{.75}{2}$ $\frac{2.5}{2} + \frac{.75}{2}$

### Area of Irregular Polygon:

<b>Card 1:</b>	2 Area	<b>Varies</b> $2\left(\frac{bh}{2}\right)$	Not Known A=bh
<b>Card 2:</b>	<b>Varies</b> Area	<b>Varies</b> $2\left(\frac{bh}{2}\right)$	Not Known A=bh
<b>Card 3:</b>	Sum of all triangles Area	<b>Varies</b> $2\left(\frac{bh}{2}\right)$	Not Known A/b=h
<b>Card 4:</b>	Sum of all triangles Area	<b>varies</b> $2\left(\frac{bh}{2}\right)$	Not Known $\frac{Pa}{2}$
<b>Card 5:</b>	Sum of all triangles Area	<b>Varies</b> $2\left(\frac{bh}{2}\right)$	Not Known A=bh
<b>Card 6:</b>	Sum of all triangles Area	<b>Varies</b> $2\left(\frac{bh}{2}\right)$	Not Known $\frac{Pa}{2}$
<b>Card 7:</b>	Sum of all triangles Area	<b>Varies</b> $2\left(\frac{bh}{2}\right)$	Not Known A=bh
<b>Card 8:</b>	Sum of all triangles Area	<b>Varies</b> $2\left(\frac{bh}{2}\right)$	Not Known A=bh
<b>Card 9:</b>	Sum of all triangles Area	<b>Varies</b> $2\left(\frac{bh}{2}\right)$	Not Known A/b=h

# Notes

# Notes

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