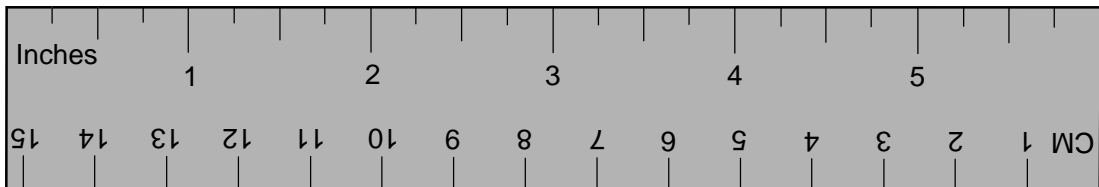
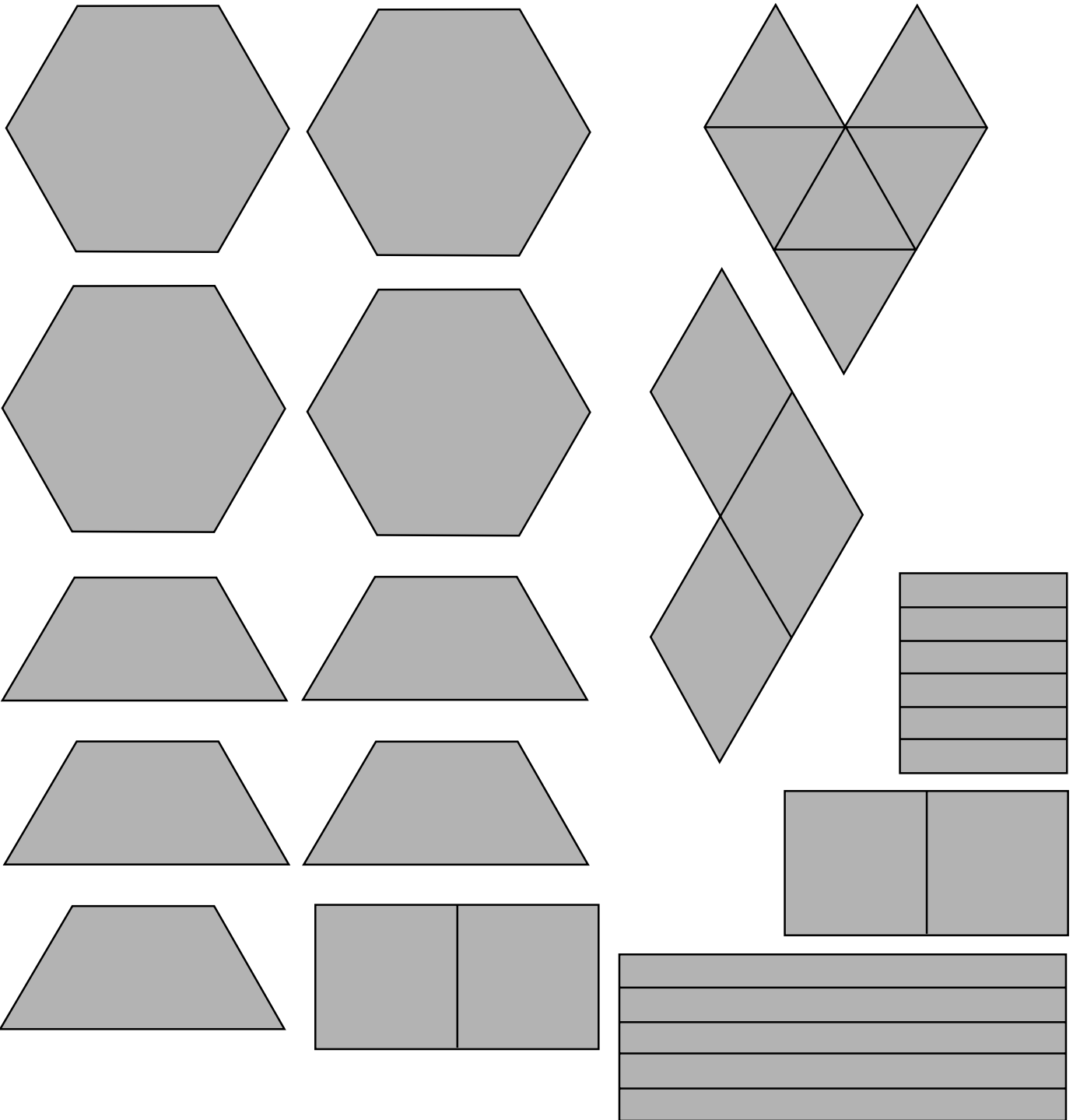

Appendix A

Mathematics Tool Kit and Reference Sheets

Appendix A

The Mathematics Tool Kit and Reference Sheets appear reduced in this publication and do not appear in the same proportion as in the test administration.

2000–2001 Massachusetts Comprehensive Assessment System
Grade 4 Mathematics Tool Kit



**2000-2001 Massachusetts Comprehensive Assessment System
Grade 6 Mathematics Reference Sheet**

Use the information below, ruler, and protractor as needed to answer questions in this test.

AREA FORMULAS

square: $A = s \cdot s$

OR

$A = lw$

rectangle: $A = bh$

OR

$A = lw$

parallelogram: $A = bh$

triangle: $A = \frac{1}{2}bh$

PERIMETER FORMULAS

square: $P = 4s$

rectangle: $P = 2b + 2h$

OR

$P = 2l + 2w$

triangle: $P = a + b + c$

OR

Perimeter = distance around

VOLUME FORMULAS

rectangular prism: $V = lwh$

CIRCLE FORMULAS

$C = 2\pi r$

OR

$C = \pi d$

$A = \pi r^2$

CONVERSIONS

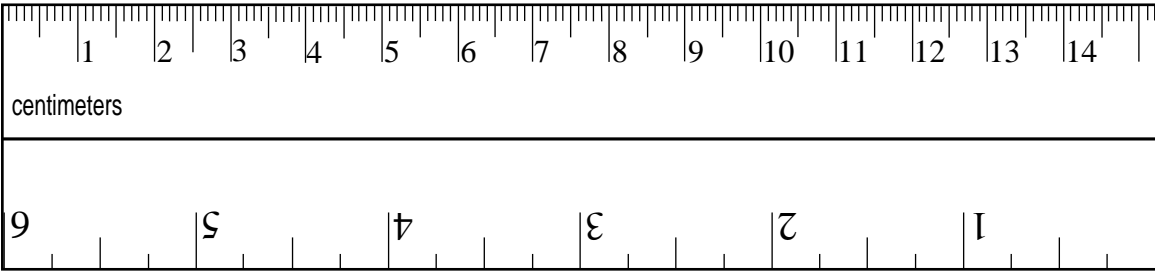
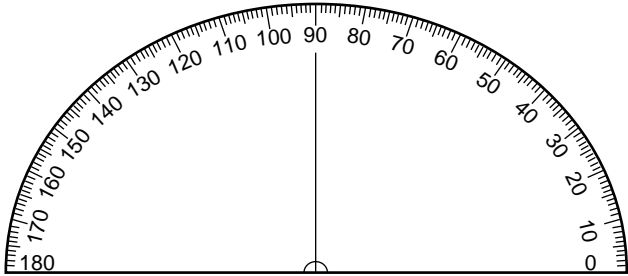
3 feet = 1 yard

5280 feet = 1 mile

60 seconds = 1 minute

60 minutes = 1 hour

**2000-2001 Massachusetts Comprehensive Assessment System
Grade 6 Mathematics Reference Sheet, Page 2**



**2000-2001 Massachusetts Comprehensive Assessment System
Grade 8 Mathematics Reference Sheet**

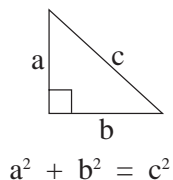
Use the information and ruler below as needed to answer questions in this test.

PERIMETER FORMULAS

square: $P = 4s$

rectangle: $P = 2b + 2h$

triangle: $P = a + b + c$



CIRCLE FORMULAS

circle: $C = 2\pi r$

OR

$C = \pi d$

$A = \pi r^2$

CONVERSIONS

1 mile = 5280 feet

1 square mile = 640 acres

AREA FORMULAS

square: $A = s^2$

rectangle: $A = bh$

triangle: $A = \frac{1}{2}bh$

circle: $A = \pi r^2$

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

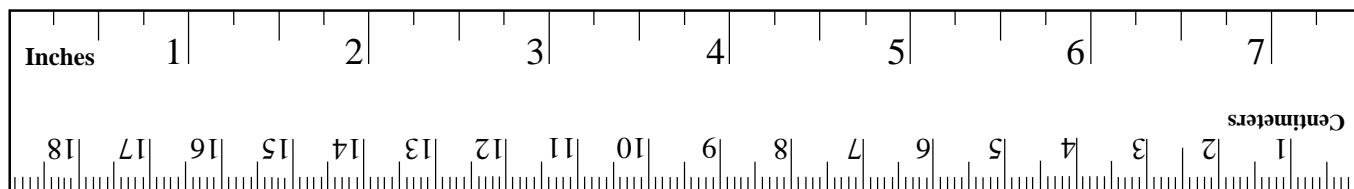
VOLUME FORMULAS

rectangular prism: $V = Bh$
($B =$ area of base)

cone: $V = \frac{\pi}{3}r^2h$

cylinder: $V = \pi r^2h$

cube: $V = e^3$
($e =$ length of an edge)



2000-2001 Massachusetts Comprehensive Assessment System Grade 10 Mathematics Reference Sheet

AREA FORMULAS

- triangle $A = \frac{1}{2}bh$
 rectangle..... $A = bh$
 square..... $A = s^2$
 trapezoid $A = \frac{1}{2}h(b_1 + b_2)$

CIRCLE FORMULAS

$$C = 2\pi r$$

$$A = \pi r^2$$

LATERAL SURFACE AREA FORMULAS

- cube..... $LA = 4s^2$
 regular prism..... $LA = 2(hw) + 2(lh)$
 right circular cylinder $LA = 2\pi rh$
 right circular cone..... $LA = \pi r \ell$
 right square pyramid..... $LA = 2s \ell$
 (ℓ = slant height)

TOTAL SURFACE AREA FORMULAS

- cube..... $SA = 6s^2$
 regular prism..... $SA = 2(lw) + 2(hw) + 2(lh)$
 sphere..... $SA = 4\pi r^2$
 right circular cylinder..... $SA = 2\pi r^2 + 2\pi rh$
 right circular cone..... $SA = \pi r^2 + \pi r \ell$
 right square pyramid..... $SA = s^2 + 2s \ell$
 (ℓ = slant height)

VOLUME FORMULAS

- cube..... $V = s^3$
 regular prism..... $V = lwh = Bh$
 (B = area of the base)
 sphere..... $V = \frac{4}{3}\pi r^3$
 right circular cylinder $V = \pi r^2h$
 right circular cone..... $V = \frac{1}{3}\pi r^2h$
 right square pyramid..... $V = \frac{1}{3}s^2h$

