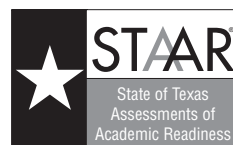


STAAR GRADE 8 MATHEMATICS REFERENCE MATERIALS



LINEAR EQUATIONS

Slope-intercept form $y = mx + b$

Direct variation $y = kx$

Slope of a line $m = \frac{y_2 - y_1}{x_2 - x_1}$

CIRCUMFERENCE

Circle $C = 2\pi r$ or $C = \pi d$

AREA

Triangle $A = \frac{1}{2}bh$

Rectangle or parallelogram $A = bh$

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

Circle $A = \pi r^2$

SURFACE AREA

	Lateral	Total
Prism	$S = Ph$	$S = Ph + 2B$
Cylinder	$S = 2\pi rh$	$S = 2\pi rh + 2\pi r^2$

VOLUME

Prism or cylinder $V = Bh$

Pyramid or cone $V = \frac{1}{3}Bh$

Sphere $V = \frac{4}{3}\pi r^3$

ADDITIONAL INFORMATION

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

Simple interest $I = Prt$

Compound interest $A = P(1 + r)^t$

Directions: When working each of the following questions, be sure to show all work. Be sure to use 3.14 for pi.

1) Find the volume. Round to the nearest tenth.

a) 26.2 in.^3

b) 104.6 in.^3

c) 104.7 in.^3

d) 6.5 in.^3



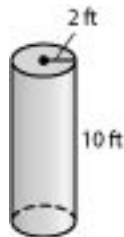
2) Find the volume. Round to the nearest tenth.

a) 125.6 ft^3

b) 127 ft^3

c) 201 ft^3

d) 502.4 ft^3



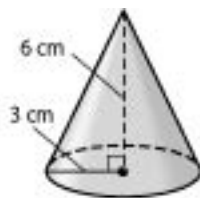
3) Find the volume. Round to the nearest tenth.

a) 201.2 cm^3

b) 21.2 cm^3

c) 47.1 cm^3

d) 56.5 cm^3



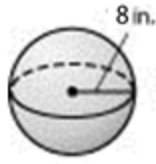
4) Find the volume. Round to the nearest tenth.

a) $1,071.8 \text{ in.}^3$

b) $1,071.7 \text{ in.}^3$

c) 267 in.^3

d) 268 in.^3



5) Find the volume. Round to the nearest tenth.

cylinder:

diameter = 8 mm

height = 3.4 mm

a) 170.8 mm^3

b) 201 mm^3

c) 401.9 mm^3

d) 803.8 mm^3

6) Find the volume. Round to the nearest tenth.

cone:

diameter = 5 mm

height = 11 mm

a) 71.9 mm^3

b) 72 mm^3

c) 317.9 mm^3

d) 287.8 mm^3

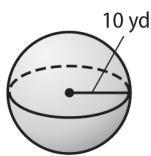
7) Find the volume. Round to the nearest tenth.

a) $1,674.7 \text{ yd}^3$

b) 418.7 yd^3

c) 267 yd^3

d) 268 yd^3



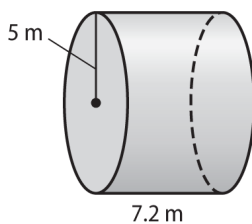
8) Find the volume. Round to the nearest tenth.

a) 115.5 m^3

b) 278.9 m^3

c) 565.2 m^3

d) 2260.8 m^3



9) Determine the volume of the cylinder with a diameter of 10 inches and a height of 12 inches. Round to the nearest tenth.

a) 820 in^3

b) 942 in^3

c) $3,454 \text{ in}^3$

d) 3768 in^3

10) A hemisphere has a radius of 8 centimeters. Find the volume of the hemisphere. Round to the nearest tenth.

a) $1,071.8 \text{ cm}^3$

b) 267.9 cm^3

c) 133.9 cm^3

d) 134 cm^3

11) A cylindrical waste can has a height of 20 inches and its base has a radius of 9.5 inches. Find the volume of the waste can. Round to the nearest tenth.

a) $1,271.7 \text{ in}^3$

b) $1,416.9 \text{ in}^3$

c) $2,833.9 \text{ in}^3$

d) $5,667.7 \text{ in}^3$

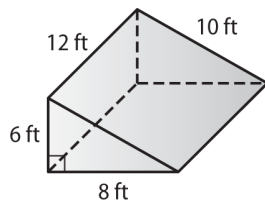
12) Determine the lateral area. Round to the nearest tenth.

a) 108 ft^2

b) 288 ft^2

c) 312 ft^2

d) 336 ft^2



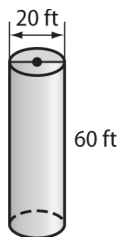
13) Find the lateral area. Round to the nearest tenth.

a) 608 ft^2

b) 818 ft^2

c) $3,768 \text{ ft}^2$

d) $7,536 \text{ ft}^2$



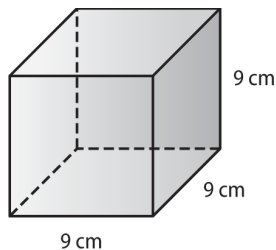
14) Determine the surface area. Round to the nearest tenth.

a) 256 cm^2

b) 324 cm^2

c) 486 cm^2

d) 512 cm^2



15) A water tank has to be painted. What is the area of the surface to be painted? Assume that the bottom does not need painting. Round to the nearest whole number. (hint: don't include the bottom)

a) 138.2 ft^2

b) 150.7 ft^2

c) 263.8 ft^2

d) 276.3 ft^2

