STAPLE

Name _____

# STAAR GRADE 8 MATHEMATICS REFERENCE MATERIALS

STAAR State of Texas Assessments of Academic Readiness

## 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 | $A = P(1 + r)^t$ |

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Gillespie
Course 3: Ch7 Test
Connect Algebra to Geometry

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

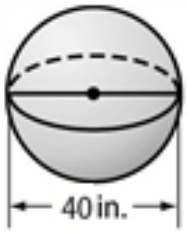
1) Find the volume. Round to the nearest tenth.

a) $1{,}427.4\ in.^3$

b) $1{,}673.7\ in.^3$

c) $1{,}674.7\ in.^3$

d) $16{,}746.3\ in.^3$



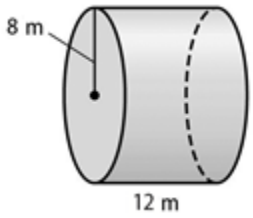

2) Find the volume. Round to the nearest tenth.

a) $241.1\ m^3$

b) $982.7\ m^3$

c) $2{,}411.52\ m^3$

d) $9{,}646.1\ m^3$



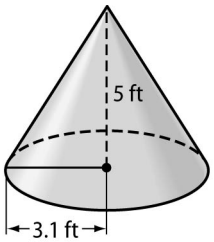

3) Find the volume. Round to the nearest tenth.

a) $201.2\ ft^3$

b) $21.2\ ft^3$

c) $47.1\ ft^3$

d) $50.3\ ft^3$



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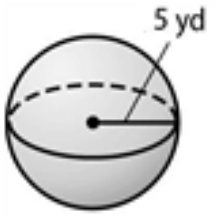
4) Find the volume. Round to the nearest tenth.

a) $104.7\ yd^3$

b) $26.2\ yd^3$

c) $26.1\ yd^3$

d) $418.7\ yd^3$




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

cylinder:
diameter = 8 mm
height = 4 mm

a) $200.96\ mm^3$

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 = 9 mm
height = 15 mm

a) $4{,}069.4\ mm^3$

b) $406.9\ mm^3$

c) $317.9\ mm^3$

d) $318\ mm^3$

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

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

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

c) $267\ in.^3$

d) $268\ in.^3$

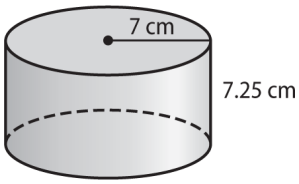

8) Find the volume. Round to the nearest tenth.

a) $115.5\ cm^3$

b) $278.9\ cm^3$

c) $2{,}310.6\ cm^3$

d) $4{,}461.94\ cm^3$




9) Determine the volume of the cylinder with a diameter of 18 inches and a height of
22 inches. Round to the nearest tenth.

a) $5{,}595.5\ in^3$

b) $13{,}677.8\ in^3$

c) $22{,}381.9\ in^3$

d) $27{,}355.7\ in^3$

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10) The diameter of a marble is 4 centimeters. What is the volume of the marble? Round to the nearest tenth.

a) 16.7 $cm^3$

b) 4.2 $cm^3$

c) 66.9 $cm^3$

d) 67 $cm^3$

11) A can of biscuits is 8 inches high, and its base has a diameter of 2 inches. What is the volume of the can? Round to the nearest tenth.

a) 100.5 $in^3$

b) 50.2 $in^3$

c) 401.9 $in^3$

d) 25.1 $in^3$

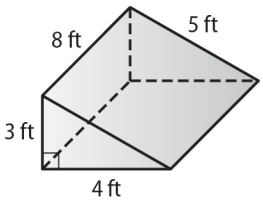
12) Determine the surface area. Round to the nearest tenth.

a) 96 $ft^2$

b) 120 $ft^2$

c) 102 $ft^2$

d) 108 $ft^2$



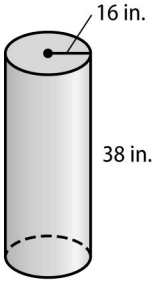

13) Find the lateral area. Round to the nearest tenth.

a) 608 $in^2$

b) 3,818 $in^2$

c) 1,216 $in^2$

d) 5,424.9 $in^2$



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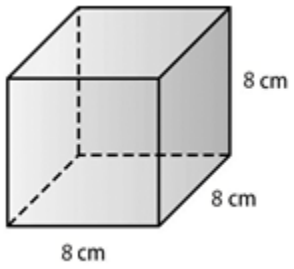
14) Determine the surface area. Round to the nearest tenth.

a) 384 $cm^2$

b) 256 $cm^2$

c) 288 $cm^2$

d) 512 $cm^2$




15) A grain silo 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) 3,919 $ft^2$

b) 3,918 $ft^2$

c) 1,620 $ft^2$

d) 1,733 $ft^2$