7th Grade Unit 5 Study Guide

Which of the following sets of side lengths below can make triangles? CC.7.G.2

1.) 2, 3, 4 — *yes or no*

2.) 2, 2, 5 — *yes or no*

3.) 2, 5, 5 — *yes or no*

4.) 2, 2, 2 — *yes or no*

5.) 9, 1, 1 — *yes or no*

6.) WRITE A RULE: ***One side cannot be longer than the sum of the other 2 lines. See?*** →

Which of the following sets of angles CAN make triangles and which CANNOT make triangles? CC.7.G.2

7.) 20˚, 40 ˚, 30 ˚ — *can or cannot*

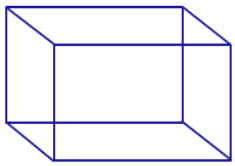
8.) 15 ˚, 35 ˚, 130 ˚ — *can or cannot*

9.) 20 ˚, 100 ˚, 60 ˚ — *can or cannot*

10.) 20 ˚, 100 ˚, 50 ˚ — *can or cannot*

11.) WRITE A RULE: ***The angles of a triangle ALWAYS add up to 180˚.***

12.) What shape is the new face when a rectangular prism… CC.7.G.3



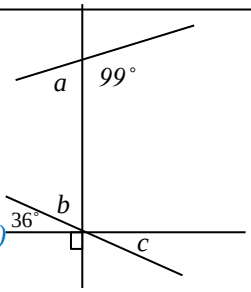
…is cut parallel to the base? ***rectangle***

…is cut perpendicular to the base? ***rectangle***

…is cut diagonally from top left to bottom right? ***rectangle***

…has 1 corner cut off? ***triangle***

13.) Find the measure of: CC.7.G.5



Angle a ***81˚*** *(supplementary to the 99˚ angle, so 180-99=81)*

Angle b ***54˚*** *(complementary to the 36˚ angle, so 90-36=54)*

Angle c ***36˚*** *(opposite to the 36˚ angle and opposite angles are equal.)*

How many different triangles can you make with… CC.7.G.2

14.) …angles of 40˚, 40 ˚, 80 ˚ ? ***None*** *(not 180˚)*

15.) …angles of 80 ˚, 77 ˚, 23 ˚ ? ***More than one***

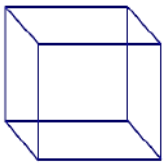
16.) …side lengths of 12, 3, 7? ***None*** *(12 >3+7)*

17.) …side lengths of 44, 20, 35? ***One***

ANSWER CHOICES

ONE, it's a unique triangle.
MORE THAN ONE triangle can be made.
NONE, a triangle cannot be made.

For number 18 & 19: The sides of a cube are 8 cm.

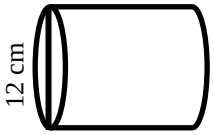


18.) Find the volume of the cube. ~~***256 units^3***~~ ***($v = 8 \cdot 8 \cdot 8$)*** CC.7.G.3

19.) Find the surface area of the cube. ***384 units^2*** CC.7.G.3

Each face is 64 units^2 (8·8). There are 6 faces (top, bottom, left, right, back, front). So, 64 · 6 = 384

20.) Write formula and find the circumference of the can. ***37.68 cm*** CC.7.G.4

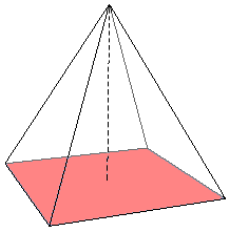


Formula is $\pi \cdot d = 3.14 \cdot 12 = 37.68cm$.

OR

Formula is $2\pi r = 2 \cdot 3.14 \cdot 6 = 37.68cm$

21.) Look at the pyramid. What shape would the new face be if the pyramid was CC.7.G.3



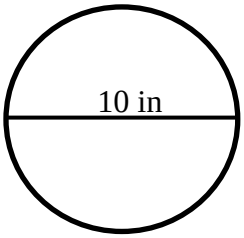
… cut parallel to the base? ***rectangle***

… cut through the tip and perpendicular to the base? ***triangle***

… cut diagonally, not through the tip? ***trapezoid***

22.) Find the area of the circle. ***78.5in²*** CC.7.G.4

$\pi r^2 = 3.14 \cdot 5^2 = 78.5$

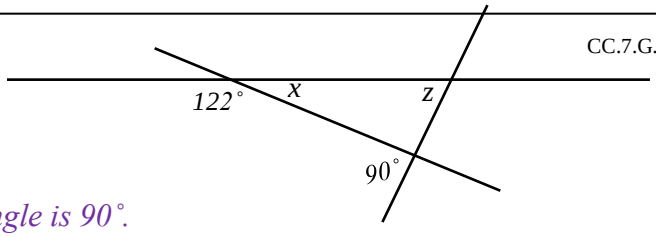


23.) Find the circumference of the circle. ***31.4 in***

$\pi d = 3.14 \cdot 10 = 31.4$ ***OR***

$2\pi r = 2 \cdot 3.14 \cdot 5 = 31.4$

Use diagram to answer questions 24 & 25. CC.7.G.5



24.) Solve for *x*. ***x = 58°*** *(supplementary to 122°)*

25.) Solve for *z*. ***z = 32°*** *(angle x is 122° and the blank angle is 90°. Subtract those 2 angles from 180° to get angle z = 32°*

Not drawn to scale.

Use the diagram to answer questions 26 & 27.

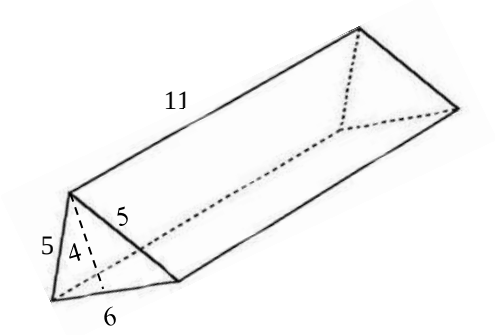
26.) Find the surface area of the prism. ***200 umits²*** CC.7.G.6

△ $= \frac{6 \cdot 4}{2} = 12$ *each. There are 2, so 24*

□ $= 5 \cdot 11 = 55$. *There are 2, so 110*

□ $= 6 \cdot 11 = 66$. *There is one, so 66*

Add them together to get 200 umits²

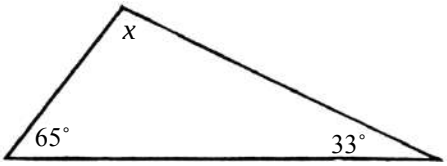


27.) Find the volume of the prism.

$\frac{6 \cdot 4}{2}(11) = 12 \cdot 11 =$ ***132 units²***

28.) Find the missing measure of the angle *x*. ***82°*** :CC.7.G.5

180 – 65 – 33 = 82°



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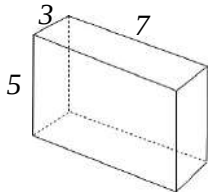
29) Find surface area of the rectangular prism. ~~***71units²***~~ CC.7.G.6

Top & bottom : 3·7=21
Fromt & Back : 5·7=35
Left & Right : 3·5=15

Add them and multiply by 2 to get ~~***71units²***~~ ***OR***
Multiply each by 2 and then add to get ~~*71 units²*~~



30.) Find the volume of the rectangular prism. ***105 units³***

The formula is l·w·h = 7·3·5 = 105 units³

31.) Find the area of the irregular shape. CC.7.G.6

Add the area of the rectangle, triangle, and half circle to get total area.
25.12 + 40 + 5 = 70.12 units²