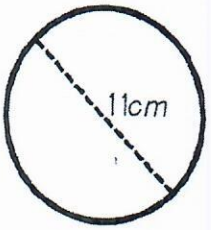
Unit Area and Circumference Review CCSS

AREA & CIRCUMFERENCE UNIT STUDY GUIDE

Solve each of the problems below. These represent the types of questions on your test. Be sure to ask questions if you need more help with a topic.

I CAN USE FORMULAS TO FIND THE CIRCUMFERENCE OF A CIRCLE. 7.G.4

1. What is the circumference of the circle? (round the nearest tenth of a cm)



$C = \pi D$

$C = \pi(11)$

$C = 34.5575...$

$C = 34.6$ cm

2. A little girl stands on a carousel and rotates around the ride 6 times. If the distance between the little girl and the center of the carousel is 8 feet, how many feet did the little girl travel? (round to nearest foot)

$C = 2\pi r$

$C = 2\pi(8)$

$C = 16\pi$

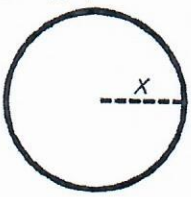
$16\pi(6)$

96π

$301.59...$

302 FT

3. The circumference of the circle is 28.26 cm. What is the radius? Use 3.14 for π.



$C = 2\pi r$

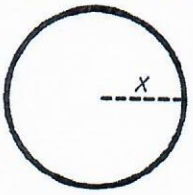
$28.26 = 2(3.14)x$

$28.26 = 6.28x$

$4.5 = x$

4.5 cm

4. The circumference of the circle below is 24π ft. What is the radius?



$C = 2\pi r$

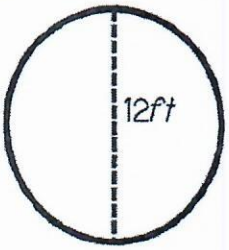
$\frac{24\pi}{2\pi} = \frac{2\pi r}{2\pi}$

$12 = r$

12FT

I CAN USE FORMULAS TO FIND THE AREA OF A CIRCLE. 7.G.4

5. What is the area of the circle? (round the nearest tenth of a square foot)



$A = \pi r^2$

$A = \pi(6^2)$

$A = 113.097...$

$A = 113.10$

$113.10\ FT^2$

6. A cell phone tower picks up signals within a 25 mile radius. How many square miles of coverage does the cell phone tower provide? (round to nearest hundredth of square mile)

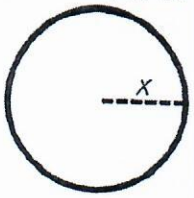
$A = \pi r^2$

$A = \pi(25^2)$

$A = 1963.495...$

$A = 1963.50\ MI^2$

7. The area of the circle below is 28.26 cm^2. What is the radius? Use 3.14 for π.



$A = \pi r^2$

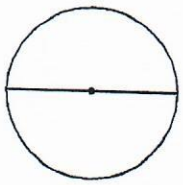
$\frac{28.26}{3.14} = \frac{3.14 r^2}{3.14}$

$9 = r^2$

$3 = r$

3 cm

8. The area of the circle below is 64π square feet. What is the diameter?



$A = \pi r^2$

$\frac{64\pi}{\pi} = \frac{\pi r^2}{\pi}$

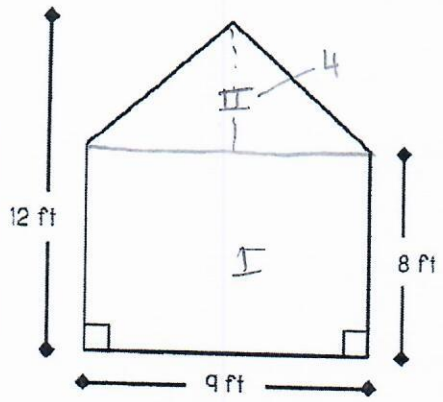
$64 = r^2$

$8 = r$

$16 = d$ 16 FT

I CAN SOLVE MATHEMATICAL AND REAL LIFE PROBLEMS INVOLVING AREA. 7.G.6

9. Determine the area of the figure below.



I $A = lw$

$A = 9(8)$

$A = 72$

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

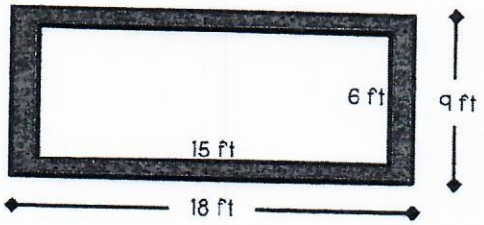
$A = \frac{1}{2}(9)(4)$

$A = 18$

$72 + 18 = 90$

$90 FT^2$

10. Mr. Richardson would like to build a planter surrounded by a brick path (shown in gray). How many square feet of brick does Mr. Richardson need?



$A = lw$

$A = 18(9)$

$A = 162$

$A = lw$

$A = 15(6)$

$A = 90$

$162 - 90 = 72$

$72 FT^2$

11. A rectangular bedroom (14 ft by 12 ft) and a rectangular hallway (8 ft by 3 ft) are getting new carpet. How many square feet of carpet will be ordered? Draw a picture to help.

$A = lw$

$A = 14(12)$

$A = 168$

$A = lw$

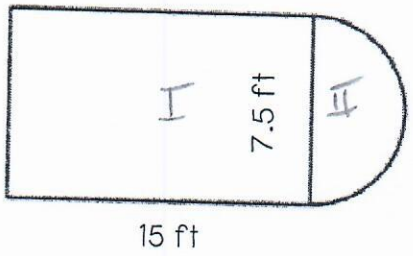
$A = 8(3)$

$A = 24$

$168 + 24 = 192$

$192 FT^2$

12. A basketball court is being painted. Everything shown below will be painted blue. How many square feet will be painted blue? (round the nearest square foot)



I $A = lw$

$A = 15(7.5)$

$A = 112.5$

II $A = \frac{1}{2}\pi r^2$

$A = \frac{1}{2}\pi (3.75^2)$

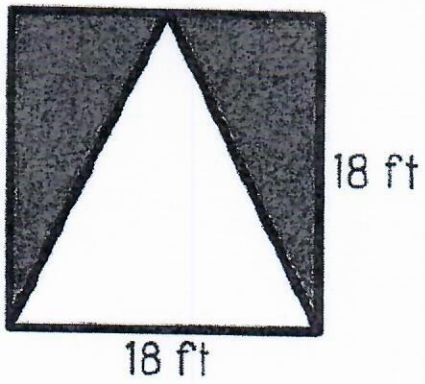
$A = 7.03125\pi$

$112.5 + 7.03125\pi$

119.53125

$120\ FT^2$

13. The shaded region represents new tile being replaced on a patio. If each square foot of tile costs $2.80, how much will the tile cost?



$A = s^2$

$A = 18^2$

$A = 324$

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

$A = \frac{1}{2}(18)(18)$

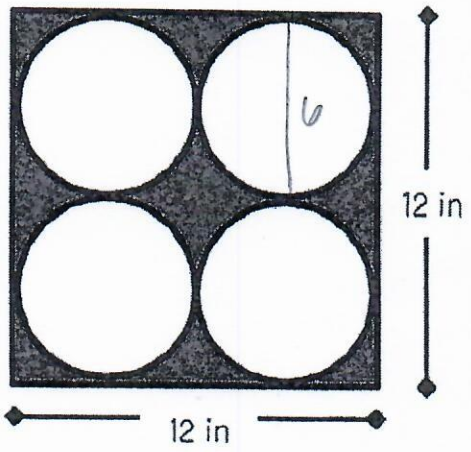
$A = 162$

$324 - 162 = 162$

$162(2.80) = 453.6$

$\$453.60$

14. Determine the area of the shaded region. (round to the nearest tenth of a square inch)



$A = s^2$

$A = 12^2$

$A = 144$

$A = \pi r^2$

$A = \pi(3^2)$

$A = 9\pi$

$9\pi(4)$

36π

$144 - 36\pi = 30.902...$

$= 30.9$

$30.9\ IN^2$

I CAN SOLVE PROBLEMS INVOLVING SCALE DRAWINGS

7.G.1

15. The photo below is being enlarged to form a 24- by 30-inch print. What is the scale factor being used to enlarge it?

$\frac{24}{4} = 6$

$\frac{30}{5} = 6$

600%

16. Shelby drew a map of the Appalachian Trail. The scale was 5 centimeters represents 400 kilometers. The map shows the Appalachian Trail to be 43.75 centimeters. What is the actual length of the Appalachian Trail?

$\frac{5}{400} = \frac{43.75}{x}$

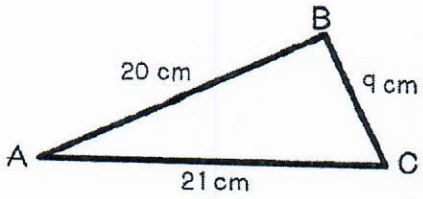
$5x = 400(43.75)$

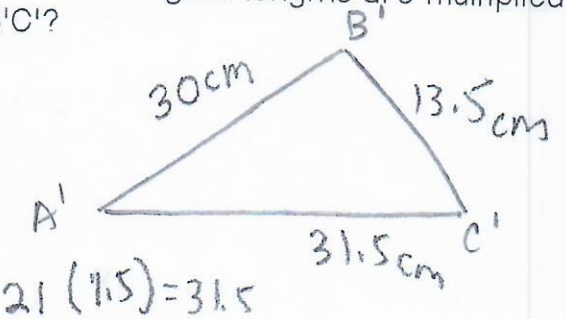
$\frac{5x}{5} = \frac{17500}{5}$

$x = 3500$

3500 MI

17. Triangle ABC is shown below. Its original lengths are multiplied by 150%. What is the new perimeter of triangle A'B'C'?



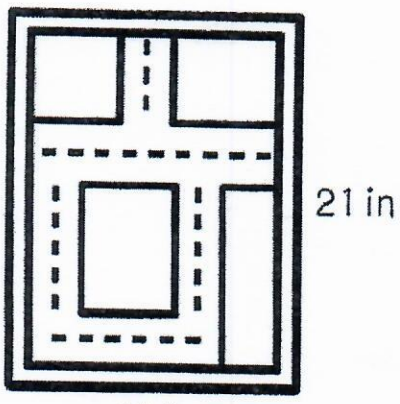


$20(1.5) = 30$

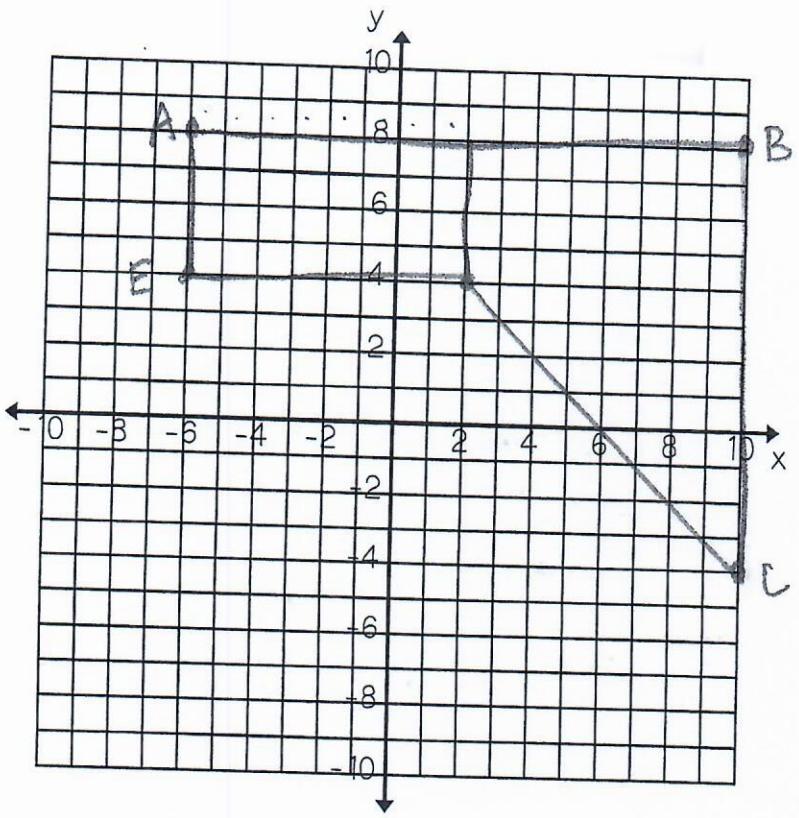
$9(1.5) = 13.5$

$21(1.5) = 31.5$

18. The map below is being reduced by a scale factor of $\frac{2}{3}$ and printed at the subway station. How many square inches will the map take up?



19. Plot, label and connect the points in order. Find the area of the figure.
A(-6,8), B(10,8), C(10,-4), D(2,4), E(-6,4)



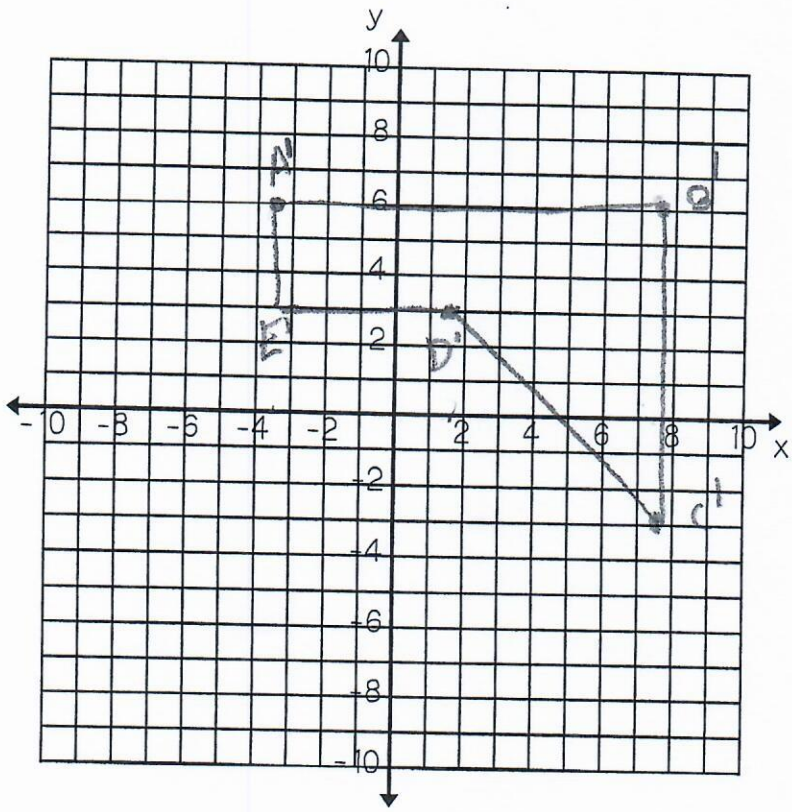
$A = lw$
$A = 8(4)$
$A = 32$

$A = \frac{1}{2}(b_1 + b_2)h$
$A = \frac{1}{2}(4+12)8$
$A = \frac{1}{2}(16)(8)$
$A = 64$

$32 + 64 = 92$

92 UNITS^2

20. Using the figure you made in question 19, create a scale drawing using a scale factor of 75%.



A' (-4.5, 6)
B' (7.5, 6)
C' (7.5, -3)
D' (1.5, 3)
E' (-4.5, 3)