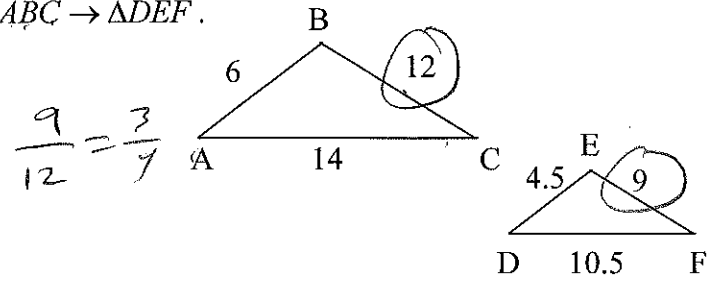


GEOMETRY – 2nd Semester
Final Exam Review Multiple Choice

1. Give the scale factor for the dilation of $\triangle ABC \rightarrow \triangle DEF$.

- A $\frac{3}{4}$
- B 3
- C 2.5
- D $\frac{1}{3}$



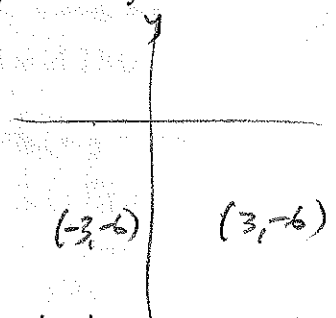
2. What is the translation image of $(-3, 5)$ under the translation $(x, y) \rightarrow (x-3, y+7)$.

- A $(0, 12)$
- B $(-6, 12)$
- C $(-6, -2)$
- D $(0, -2)$

Handwritten calculation: $-3-3, 5+7$
 $-6, 12$

3. What is the reflection of the image $(-3, -6)$ over the y-axis?

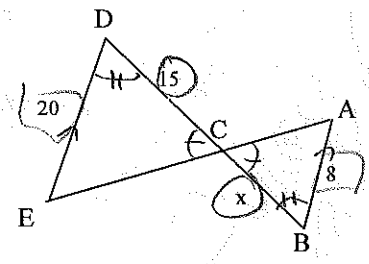
- A $(-3, 6)$
- B $(-6, -3)$
- C $(3, -6)$
- D $(6, -3)$



4. If $\overline{AB} \parallel \overline{DE}$, find the value of x in the following image.

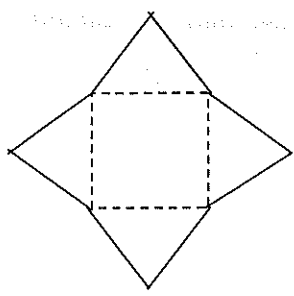
- A 3
- B 6
- C 8
- D 12

Handwritten calculation: $\frac{x}{15} = \frac{8}{20} = \frac{4}{10} = \frac{2}{5}$
 $5x = 30$
 $x = 6$



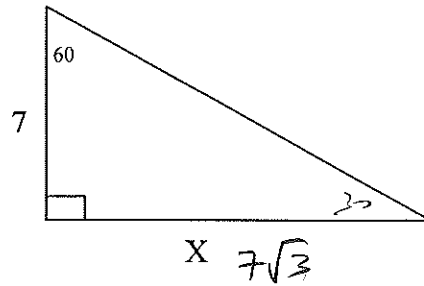
5. Identify the solid formed when the folds are made along the dotted lines from the given net.

- A triangular prism
- B triangular pyramid
- C square pyramid
- D square prism



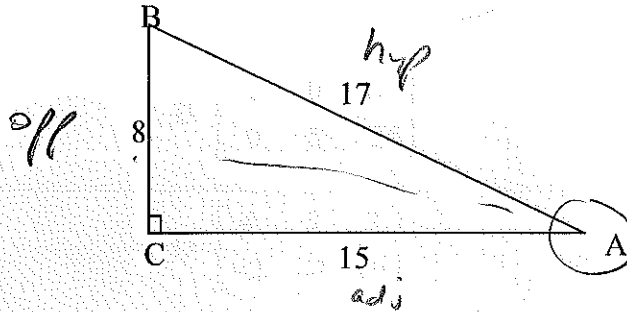
6. Solve for x in simplified radical form.

- A 3.5
- B 14
- C $7\sqrt{3}$
- D $\frac{7}{\sqrt{3}}$



7. Find $\sin A$. = $\frac{\text{opp}}{\text{hyp}} = \frac{8}{17}$

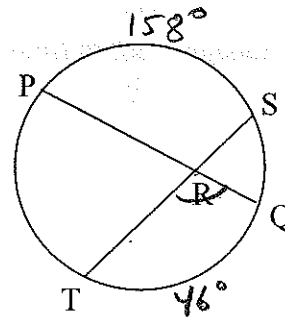
- A $\frac{15}{17}$
- B $\frac{8}{17}$
- C $\frac{15}{8}$
- D $\frac{7}{15}$



8. Given chords \overline{TS} and \overline{PQ} of a circle intersecting at R. If $m\widehat{TQ} = 46^\circ$ and $m\widehat{PS} = 158^\circ$, then find $m\angle TRQ$.

- A 46°
- B 158°
- C 23°
- D 102°

$$\begin{aligned} \text{angle} &= \frac{1}{2}(\text{big} + \text{little}) \\ &= \frac{1}{2}(158 + 46) \\ &= \frac{1}{2}(204) \\ &= 102 \end{aligned}$$

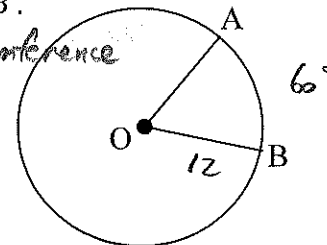


$$\begin{array}{r} 158 \\ + 46 \\ \hline 204 \end{array}$$

9. In circle O, $OB = 12$ and $m\widehat{AB} = 60^\circ$. Find the length of \widehat{AB} .

- A 2π
- B 4π
- C 24π
- D 60π

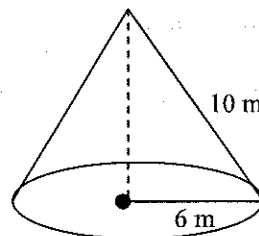
$$\begin{aligned} \text{arc length} &= \frac{\text{arc}}{360} \cdot 2\pi r \quad \leftarrow \text{Circumference} \\ &= \frac{60}{360} \cdot 2\pi(12) \\ &= \frac{2\pi(12)^2}{61} = 4\pi \end{aligned}$$



10. Find the total surface area of a cone if the radius is 6m and the slant height is 10m.

- A 36π
- B 60π
- C 72π
- D 96π

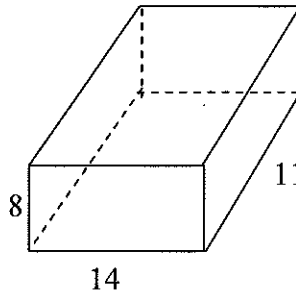
$$\begin{aligned} SA_{\text{cone}} &= \pi r l + \pi r^2 \\ &= \pi(6)(10) + \pi(6)^2 \\ &= 60\pi + 36\pi \\ &= 96\pi \end{aligned}$$



11. Find the volume of the right rectangular prism.

- A $33 u^3$
- B $1232 u^3$
- C $154 u^3$
- D $616 u^3$

$$V_{\text{box}} = l \cdot w \cdot h \\ = 8 \cdot 14 \cdot 11$$



$$\begin{array}{r} 214 \\ \times 8 \\ \hline 112 \\ \times 11 \\ \hline 112 \\ \hline 112 \\ \hline 1232 \end{array}$$

12. Add the matrices: $\begin{bmatrix} 7 & 0 & 4 \\ -2 & 1 & 5 \end{bmatrix} + \begin{bmatrix} -3 & 5 & 3 \\ 0 & 5 & -5 \end{bmatrix} = \begin{bmatrix} 4 & 5 & 7 \\ -2 & 6 & 0 \end{bmatrix}$

A $\begin{bmatrix} 10 & -5 & 1 \\ -2 & -4 & 10 \end{bmatrix}$

B $\begin{bmatrix} -21 & 0 & 12 \\ 0 & 5 & -25 \end{bmatrix}$

C $\begin{bmatrix} 4 & 5 & 7 \\ -2 & 6 & 0 \end{bmatrix}$

D $\begin{bmatrix} 4 & 5 & 7 \\ -2 & -4 & 10 \end{bmatrix}$

13. For the sequence below, what is the rule to determine the next term in the sequence?

$$\frac{5}{3}, \frac{7}{3}, \frac{9}{3}, \frac{11}{3}, \frac{13}{3}, \dots \quad \text{top add } 2 \quad \text{so add } \frac{2}{3}$$

- A Add the previous two terms
- B Multiply the last term by $\frac{2}{3}$
- C Add 2 to the last term
- D Add $\frac{2}{3}$ to the last term

14. If the block pattern continues, how many single blocks will be in the 100th figure?



- A 99
- B 100
- C 101
- D 102

2 → 3 → 4 → 5
+1 +1 +1

$d=1$ arithmetic sequence
 $a_n = a_1 + d(n-1)$ so $a_{100} = 2 + (1)(100-1)$
 $= 2 + 99$
 $= 101$

15. The algorithm (area of regular base) x (height) / 3 is used to calculate which of the following

- A Volume of a Cone
- B Volume of a Cylinder
- C Surface Area of a Prism
- D Volume of a Regular Pyramid

$$\frac{1}{3} Bh = \text{formula for volume of Pyramid}$$

(proportions - use fractions)

16. The polygons to the right are similar. Find the value of x.

- A 25
- B 23
- C 14**
- D 12

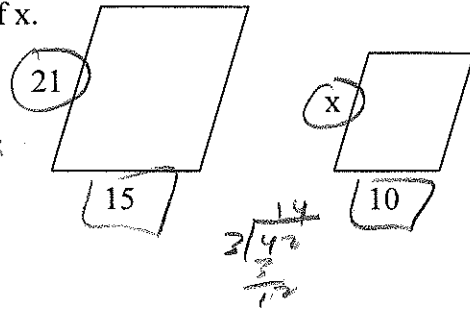
$$\frac{x}{21} = \frac{10}{15}$$

$$\frac{x}{21} \times \frac{2}{2} = \frac{20}{30}$$

$$3x = 2(21)$$

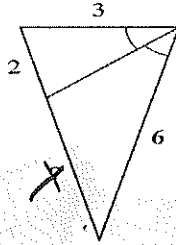
$$\frac{3x}{3} = \frac{42}{3}$$

$$x = 14$$



17. Find the value of ?

- A 3
- B 4**
- C 5
- D 9



Side-splitter theorem:

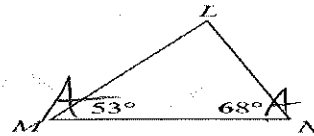
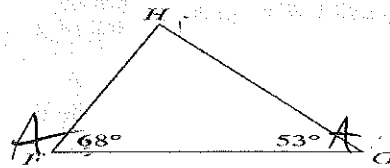
$$\frac{x}{6} = \frac{2}{3}$$

$$3x = 12$$

$$x = 4$$

18. Which postulate/theorem proves the triangles are similar and complete the similarity statement.

- A AA, $\triangle LMN$
- B AA, $\triangle NML$**
- C SAS, $\triangle LMN$
- D SAS, $\triangle NML$

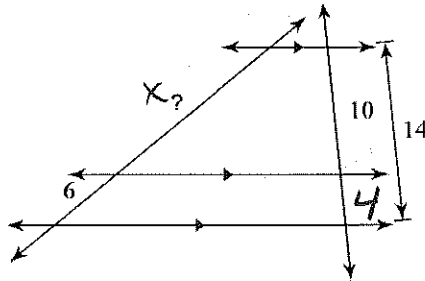


$$\triangle FGH \sim \triangle NML$$

AA

19. Find the value of ?

- A 8
- B 10
- C 12
- D 13**



$$\frac{x}{10} = \frac{6}{4}$$

$$2x = 3(10)$$

$$\frac{2x}{2} = \frac{30}{2}$$

$$x = 15$$

20. If $\overline{FG} \parallel \overline{HI}$, $EF = 8$, $FH = 10$, and $GI = 15$, then find EG.

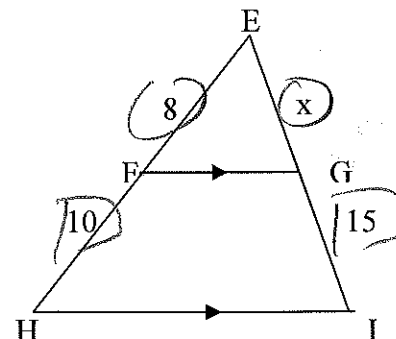
- A 5.3
- B 8
- C 12**
- D 13

$$\frac{x}{8} = \frac{15}{10}$$

$$2x = 3(8)$$

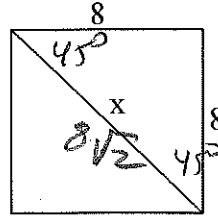
$$\frac{2x}{2} = \frac{24}{2}$$

$$x = 12$$



21. Find x in simplified radical form.

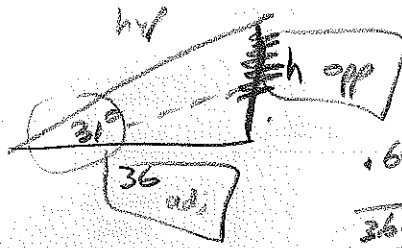
- A 64
- B $8\sqrt{2}$**
- C 16
- D $\frac{8}{\sqrt{2}}$



$45^\circ-45^\circ-90^\circ$
pattern
long side is $\sqrt{2}$ times
short side

22. At a distance of 36 meters from a tree, the angle from the ground to the top of the tree is 31° . Find the height of the tree.

- A 18.5 m
- B 21.6 m**
- C 22.5 m
- D 30.8 m



Solve with SOHCAHTOA

$\sin 31 = .5150$ $\cos 31 = .8572$ $\tan 31 = .6009$

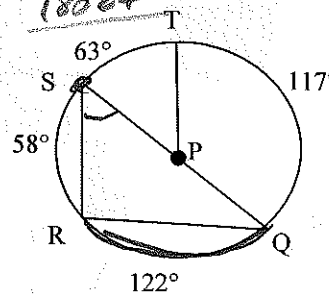
$\tan A = \frac{\text{opp}}{\text{adj}}$
 $\tan 31^\circ = \frac{h}{36}$

$h = (6009) = \left(\frac{h}{36}\right) \cdot 36$
 $36(.6009) = h$
 $21.6324 \approx 21.6$

23. Given circle P, find $m \angle QSR$.

- A 58°
- B 61°**
- C 122°
- D 244°

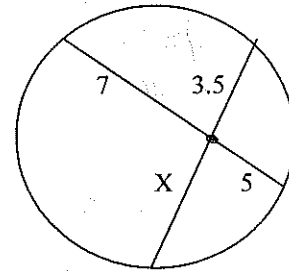
angle = $\frac{1}{2}$ arc
 $= \frac{1}{2} 122$
 $= 61$



24. Given two intersecting chords within a circle. Find x .

- A 7
- B 10**
- C 8.5
- D 5

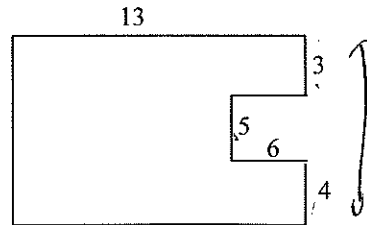
power theorem
 $3.5x = 7(5)$
 $3.5x = 35$
 $\frac{3.5x}{3.5} = \frac{35}{3.5}$
 $x = 10$



25. Find the area of the figure. Assume right angles.

- A $122 u^2$
- B $126 u^2$**
- C $114 u^2$
- D $156 u^2$

$A_{\text{whole rect}} = 13 \cdot 12 = 156$
 $- A_{\text{small hole}} = \frac{5 \cdot 6}{26} = 30$

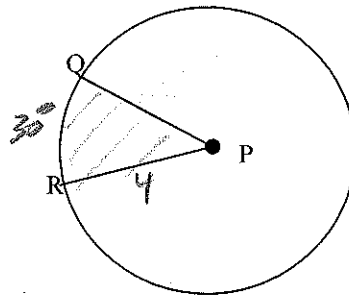


$\frac{13}{12}$
 $\frac{12}{26}$
 $\frac{13}{156}$

26. In circle P, $PR = 4$ and $m\widehat{QR} = 30^\circ$. Find the area of sector PQR.

- A $\frac{4\pi}{3}$
- B 16π
- C $\frac{16\pi}{3}$
- D $\frac{8\pi}{3}$

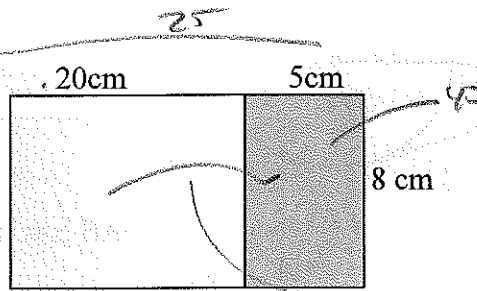
$$\begin{aligned}
 A_{\text{sector}} &= \frac{\text{arc}}{360} \pi r^2 \\
 &= \frac{30}{360} \pi (4)^2 \\
 &= \frac{\pi 16}{12} \\
 &= \frac{4\pi}{3}
 \end{aligned}$$



27. A dart is thrown at random at the board shown. If the dart hits the board, find the probability that it will land in the shaded area.

- A $\frac{1}{2}$
- B $\frac{1}{3}$
- C $\frac{1}{4}$
- D $\frac{1}{5}$

$$\begin{aligned}
 P(\text{shaded}) &= \frac{A_{\text{shaded}}}{A_{\text{total}}} \\
 &= \frac{40}{200} \\
 &= \frac{2}{10} \\
 &= \frac{1}{5}
 \end{aligned}$$



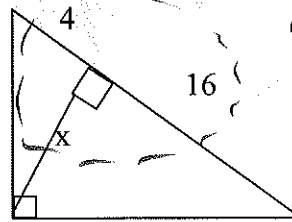
$$25 \cdot 8 = 200$$

$$\frac{25}{10} = \frac{5}{2}$$

28. In the diagram, find x .

- A 4
- B 8
- C 12
- D 20

$$\frac{16}{4} = \frac{64}{16}$$

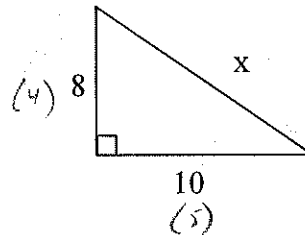


grouping problem
 $(\text{top } \#)^2 = \text{other numbers multiplied}$
 $x^2 = 16(4)$
 $x^2 = 64$
 $x = 8$

29. For the right triangle, solve for x in simplified radical form.

- A 18
- B 14
- C $2\sqrt{41}$
- D $4\sqrt{41}$

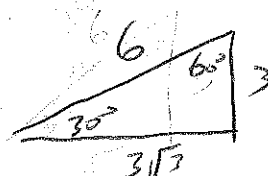
Triples don't work because 5 isn't biggest side so... Pythagorean Theorem



$$\begin{aligned}
 8^2 + 10^2 &= x^2 \quad \leftarrow \text{longest side by itself} \\
 64 + 100 &= x^2 \\
 164 &= x^2 \\
 x &= \sqrt{164} \\
 &= \sqrt{4 \cdot 41} \\
 &= 2\sqrt{41}
 \end{aligned}$$

30. The hypotenuse of a 30° - 60° - 90° triangle measures 6. How long is the leg opposite the 60° angle?

- A 3
- B $3\sqrt{3}$
- C $6\sqrt{3}$
- D 12



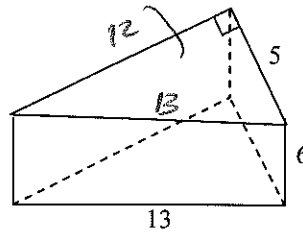
31. Find the volume of the right prism.

- A 180 u^3
- B 240 u^3
- C 360 u^3
- D 390 u^3

$$V = Bh$$

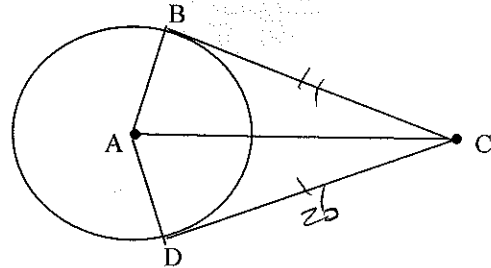
$$= 30 \cdot 6 = 180$$

$$B = \frac{1}{2}(12)(5) = 6.5 = 30$$



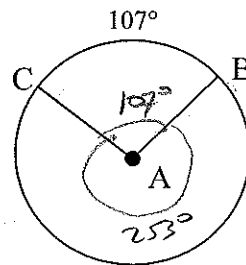
32. Given circle A with tangents BC and DC. If $DC = 20$, Find BC.

- A 20
- B 10
- C 25
- D 15



33. Given circle A with $m\widehat{BC} = 107^\circ$, find $m\angle BAC$.

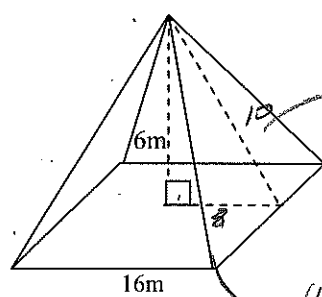
- A 73°
- B 107°
- C 180°
- D 253°



$$\frac{360}{107} = 253$$

34. Find the total surface area of the pyramid.

- A 96 m^2
- B 320 m^2
- C 336 m^2
- D 576 m^2



$$\frac{316}{16} = 19.6$$

$$\frac{16}{256}$$

$$A = \frac{1}{2}(16)(10) = 80$$

$$\text{base} = (16)(16) = 256$$

$$\times 4 \text{ side}$$

$$\frac{320}{1256} = 576$$

35. Given circle B, find x.

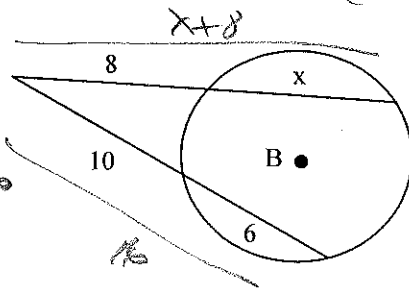
- A 12
- B 10
- C 8
- D 6

$$8(x+8) = 10(16)$$

$$x+8 = \frac{10(16)}{8} = 20$$

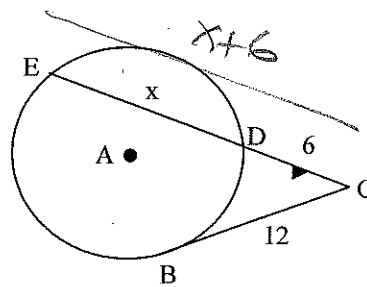
$$x+8 = 20$$

$$x = 12$$



36. Given tangent \overline{BC} to circle A, solve for x .

- A 6
- B 12
- C 16
- D 18



$$6(x+6) = (12)^2$$

$$x+6 = \frac{12 \cdot 12}{6}$$

$$x+6 = 24$$

$$x = 18$$

37. The volume of a cone is $256\pi \text{ in}^3$ and the height of the cone is 12 in. Find the radius of the cone.

- A 8 in.
- B 16 in.
- C 32 in.
- D 64 in.

$$V = \frac{1}{3} \pi r^2 h$$

$$256\pi = \frac{\pi r^2 (12)}{3}$$

$$256 = r^2 \cdot 4$$

$$64 = r^2$$

$$8 = r$$

38. What is the center and radius of the circle $x^2 + (y - 5)^2 = 36$

- A center (1, 5) radius 36
- B center (0, -5) radius 6
- C center (0, -5) radius 18
- D center (0, 5) radius 6

$$(0, 5) \quad r=6$$

39. Find the radius of a circle with a circumference of 36π .

- A 18
- B 6
- C 72
- D 36

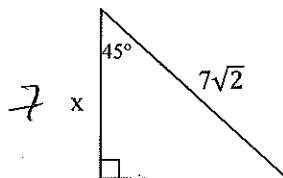
$$C = 2\pi r$$

$$36\pi = 2\pi r$$

$$18 = r$$

40. Find the value of x .

- A 7
- B 14
- C $7\sqrt{2}$
- D $14\sqrt{2}$



45-45-90 pattern

41. Find the area of the triangle if the height is 7 inches and the base is 15 inches long.

- A 52.5 in^2
- B 59.5 in^2
- C 105 in^2
- D 127.5 in^2

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

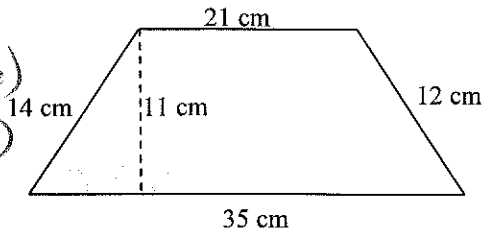
$$= \frac{1}{2}15 \cdot 7 = 7.5 \cdot 7$$

$$= 52.5$$

42. Find the area of the trapezoid.

- A 231 cm²
- B 392 cm²
- C 308 cm²**
- D 336 cm²

$$\begin{aligned}
 A &= \frac{1}{2}h(b_1 + b_2) \\
 &= \frac{1}{2}(11)(21 + 35) \\
 &= \frac{1}{2}11(56) \\
 &= 11 \cdot 28 \\
 &= 308
 \end{aligned}$$

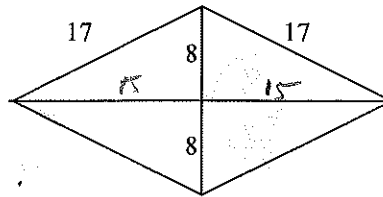


$$\begin{array}{r}
 28 \\
 \times 11 \\
 \hline
 28 \\
 280 \\
 \hline
 308
 \end{array}$$

43. Find the area of the rhombus.

- A 136 u²
- B 240 u²**
- C 480 u²
- D 544 u²

$$\begin{aligned}
 A &= \frac{1}{2}d_1d_2 \\
 &= \frac{1}{2}(16)(30) \\
 &= 8 \cdot 30 \\
 &= 240
 \end{aligned}$$



44. Find the area of a regular heptagon if its apothem is 9 and each of its sides is 8.6.

- A 38.7 u²
- B 77.4 u²
- C 270.9 u²**
- D 541.8 u²

7 sides

$$\begin{aligned}
 A &= \frac{1}{2}ap \\
 &= \frac{1}{2}(9)(60.2) \\
 &= 9(30.1)
 \end{aligned}$$

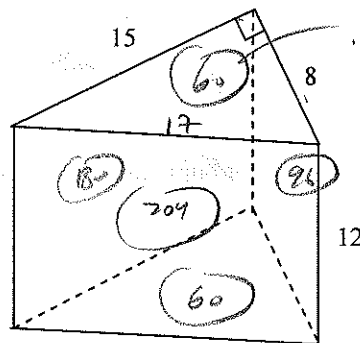
$$\begin{aligned}
 p &= 7(8.6) \\
 &= 60.2
 \end{aligned}$$

$$\begin{array}{r}
 30.1 \\
 \times 9 \\
 \hline
 270.9
 \end{array}$$

45. Find the total surface area of the prism.

- A 480 u²
- B 1440 u²
- C 720 u²
- D 600 u²**

$$\begin{array}{r}
 3 \cdot 180 \\
 204 \\
 96 \\
 60 \\
 \hline
 600
 \end{array}
 \qquad
 \begin{array}{r}
 15 \\
 12 \\
 \hline
 30 \\
 15 \\
 \hline
 180
 \end{array}$$



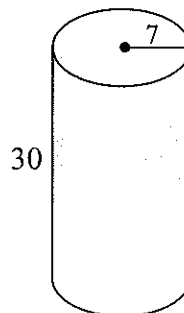
$$\frac{1}{2}(8)(15)$$

$$\begin{array}{r}
 17 \\
 12 \\
 \hline
 34 \\
 17 \\
 \hline
 204
 \end{array}
 \qquad
 \begin{array}{r}
 12 \\
 \times 8 \\
 \hline
 96
 \end{array}$$

46. Find the lateral area of the right circular cylinder. Leave answer in π units.

- A 210 π
- B 420 π**
- C 518 π
- D 660 π

$$\begin{aligned}
 SA_{cyl} &= 2\pi r^2 + 2\pi rh \\
 &= 2\pi(7)(30) \\
 &= 420\pi
 \end{aligned}$$



$$\begin{array}{r}
 60 \\
 \times 7 \\
 \hline
 420
 \end{array}$$

47. Find the volume of the sphere with radius 6 units. Leave answer in π form.

- A $288\pi u^3$
 B $905\pi u^3$
 C $72\pi u^3$
 D $864\pi u^3$

$$V_{\text{sphere}} = \frac{4}{3}\pi r^3$$

$$= \frac{4}{3}\pi(6)^3 = \frac{4\pi(6)(6)(6)}{3} = 8\pi(36) = 288\pi$$

$$\begin{array}{r} 36 \\ \times 8 \\ \hline 288 \end{array}$$

48. The height of a parallelogram is 12 ft and the area is 276 ft^2 . Find the base of the parallelogram.

- A 11.5 ft
 B 16.6 ft
 C 23 ft
 D 46 ft

$$A = b \cdot h$$

$$276 = b \cdot 12$$

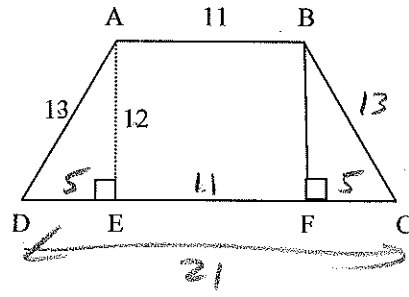
$$\frac{276}{12} = \frac{b \cdot 12}{12}$$

$$23 = b$$

$$\begin{array}{r} 23 \\ 12 \overline{) 276} \\ \underline{24} \\ 36 \\ \underline{36} \\ 0 \end{array}$$

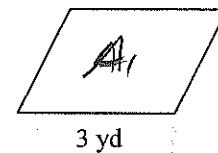
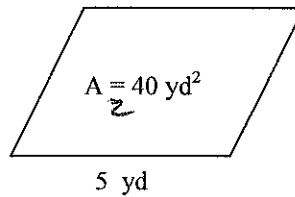
49. If $\overline{AD} \cong \overline{BC}$ in isosceles trapezoid ABCD, find DC.

- A 16
 B 21
 C 35
 D 36



50. The two polygons are similar. The area of one polygon is given. Find the area of the larger polygon to the nearest 10^{th} .

- A 9 yd^2
 B 14.4 yd^2
 C 24 yd^2
 D 25 yd^2



$$\frac{A_2}{A_1} = \frac{s_2^2}{s_1^2}$$

$$\frac{40}{A_1} = \frac{5^2}{3^2} = \frac{25}{9}$$

$$2 \overline{) 40} = \frac{20}{25} = \frac{4}{5}$$

$$A_1 = \frac{4(40)}{5} = \frac{160}{5} = 32$$

$$\begin{array}{r} 40 \\ \times 9 \\ \hline 360 \end{array}$$

$$\begin{array}{r} 14.4 \\ 25 \overline{) 360} \\ \underline{50} \\ 110 \\ \underline{100} \\ 100 \\ \underline{100} \\ 0 \end{array}$$

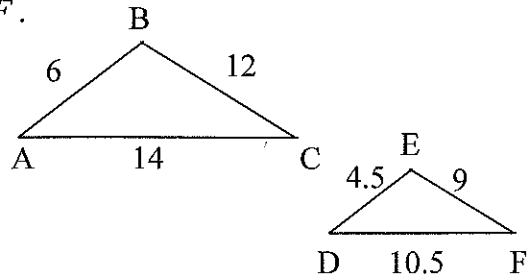
$$2 \overline{) 40} = \frac{20}{25} = \frac{4}{5}$$

$$A_1 = \frac{4(40)}{5} = \frac{160}{5} = 32$$

GEOMETRY – 2nd Semester
Final Exam Review Multiple Choice

1. Give the scale factor for the dilation of $\triangle ABC \rightarrow \triangle DEF$.

- A $\frac{3}{4}$
 B 3
 C 2.5
 D $\frac{1}{3}$



2. What is the translation image of $(-3, 5)$ under the translation $(x, y) \rightarrow (x - 3, y + 7)$.

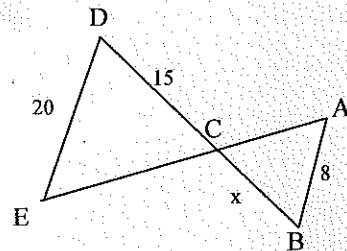
- A $(0, 12)$
 B $(-6, 12)$
 C $(-6, -2)$
 D $(0, -2)$

3. What is the reflection of the image $(-3, -6)$ over the y-axis?

- A $(-3, 6)$
 B $(-6, -3)$
 C $(3, -6)$
 D $(6, -3)$

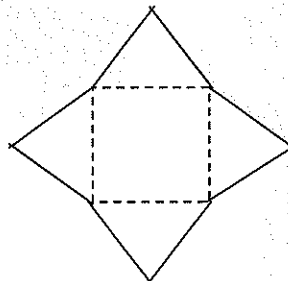
4. If $\overline{AB} \parallel \overline{DE}$, find the value of x in the following image.

- A 3
 B 6
 C 8
 D 12



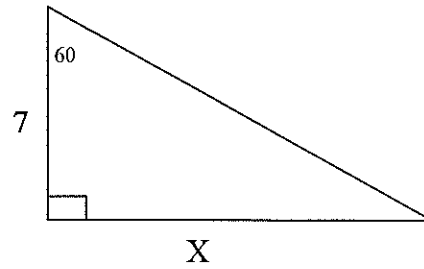
5. Identify the solid formed when the folds are made along the dotted lines from the given net.

- A triangular prism
 B triangular pyramid
 C square pyramid
 D square prism



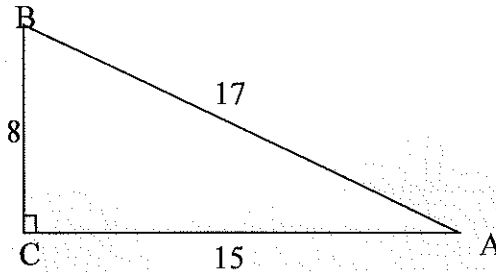
6. Solve for x in simplified radical form.

- A 3.5
- B 14
- C $7\sqrt{3}$
- D $\frac{7}{\sqrt{3}}$



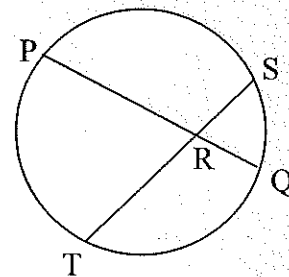
7. Find $\sin A$.

- A $\frac{15}{17}$
- B $\frac{8}{17}$
- C $\frac{15}{8}$
- D $\frac{7}{15}$



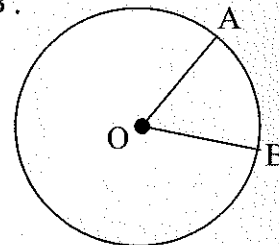
8. Given chords \overline{TS} and \overline{PQ} of a circle intersecting at R. If $m\widehat{TQ} = 46^\circ$ and $m\widehat{PS} = 158^\circ$, then find $m\angle TRQ$.

- A 46°
- B 158°
- C 23°
- D 102°



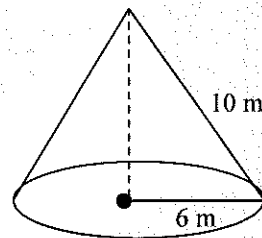
9. In circle O, $OB = 12$ and $m\widehat{AB} = 60^\circ$. Find the length of \widehat{AB} .

- A 2π
- B 4π
- C 24π
- D 60π



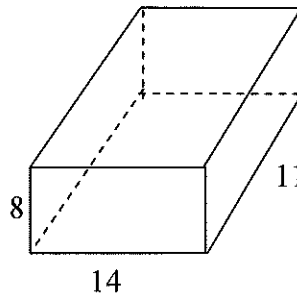
10. Find the total surface area of a cone if the radius is 6m and the slant height is 10m.

- A 36π
- B 60π
- C 72π
- D 96π



11. Find the volume of the right rectangular prism.

- A $33 u^3$
- B $1232 u^3$
- C $154 u^3$
- D $616 u^3$



12. Add the matrices: $\begin{bmatrix} 7 & 0 & 4 \\ -2 & 1 & 5 \end{bmatrix} + \begin{bmatrix} -3 & 5 & 3 \\ 0 & 5 & -5 \end{bmatrix}$

A $\begin{bmatrix} 10 & -5 & 1 \\ -2 & -4 & 10 \end{bmatrix}$

B $\begin{bmatrix} -21 & 0 & 12 \\ 0 & 5 & -25 \end{bmatrix}$

C $\begin{bmatrix} 4 & 5 & 7 \\ -2 & 6 & 0 \end{bmatrix}$

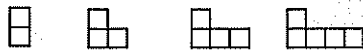
D $\begin{bmatrix} 4 & 5 & 7 \\ -2 & -4 & 10 \end{bmatrix}$

13. For the sequence below, what is the rule to determine the next term in the sequence?

$$\frac{5}{3}, \frac{7}{3}, 3, \frac{11}{3}, \frac{13}{3}, \dots$$

- A Add the previous two terms
- B Multiply the last term by $\frac{2}{3}$
- C Add 2 to the last term
- D Add $\frac{2}{3}$ to the last term

14. If the block pattern continues, how many single blocks will be in the 100th figure?



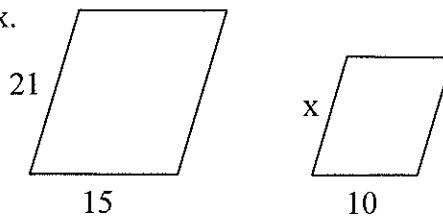
- A 99
- B 100
- C 101
- D 102

15. The algorithm (area of regular base) x (height) / 3 is used to calculate which of the following

- A Volume of a Cone
- B Volume of a Cylinder
- C Surface Area of a Prism
- D Volume of a Regular Pyramid

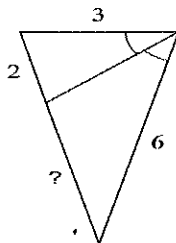
16. The polygons to the right are similar. Find the value of x .

- A 25
- B 23
- C 14
- D 12



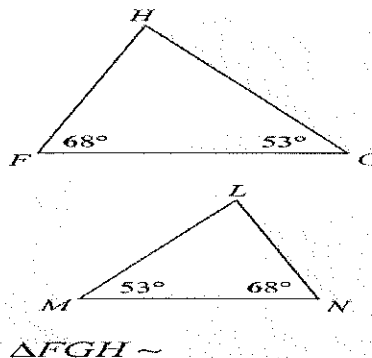
17. Find the value of $?$.

- A 3
- B 4
- C 5
- D 9



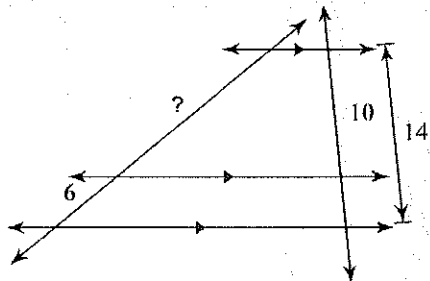
18. Which postulate/theorem proves the triangles are similar and complete the similarity statement.

- A AA, $\triangle LMN$
- B AA, $\triangle NML$
- C SAS, $\triangle LMN$
- D SAS, $\triangle NML$



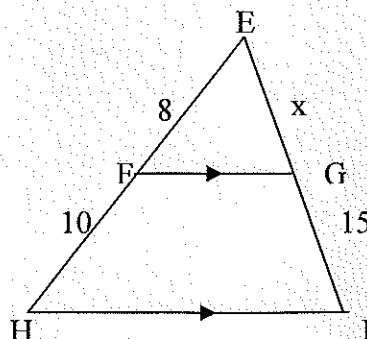
19. Find the value of $?$

- A 8
- B 10
- C 12
- D 15



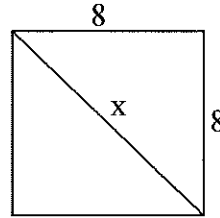
20. If $\overline{FG} \parallel \overline{HI}$, $EF = 8$, $FH = 10$, and $GI = 15$, then find EG .

- A $5\sqrt{3}$
- B 8
- C 12
- D 13



21. Find x in simplified radical form.

- A 64
- B $8\sqrt{2}$
- C 16
- D $\frac{8}{\sqrt{2}}$



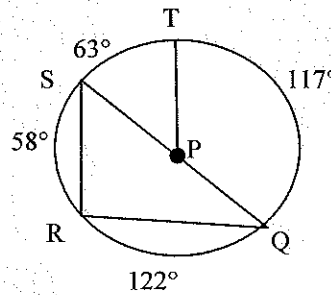
22. At a distance of 36 meters from a tree, the angle from the ground to the top of the tree is 31° . Find the height of the tree.

- A 18.5 m
- B 21.6 m
- C 22.5 m
- D 30.8 m

$\sin 31 = .5150$ $\cos 31 = .8572$ $\tan 31 = .6009$

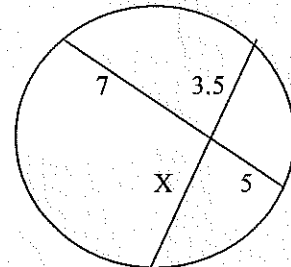
23. Given circle P, find $m \angle QSR$.

- A 58°
- B 61°
- C 122°
- D 244°



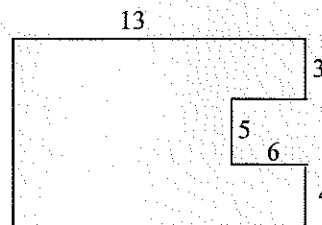
24. Given two intersecting chords within a circle. Find x .

- A 7
- B 10
- C 8.5
- D 5



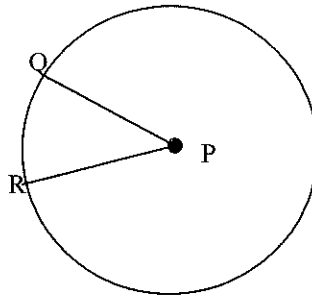
25. Find the area of the figure. Assume right angles.

- A $122 u^2$
- B $126 u^2$
- C $114 u^2$
- D $156 u^2$



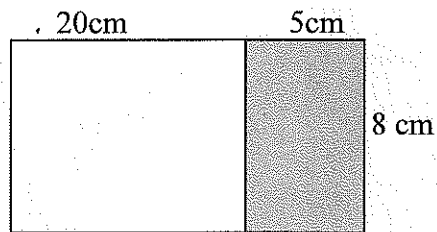
26. In circle P, $PR = 4$ and $m\widehat{QR} = 30^\circ$. Find the area of sector PQR.

- A $\frac{4\pi}{3}$
 B 16π
 C $\frac{16\pi}{3}$
 D $\frac{8\pi}{3}$



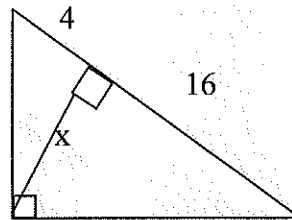
27. A dart is thrown at random at the board shown. If the dart hits the board, find the probability that it will land in the shaded area.

- A $\frac{1}{2}$
 B $\frac{1}{3}$
 C $\frac{1}{4}$
 D $\frac{1}{5}$



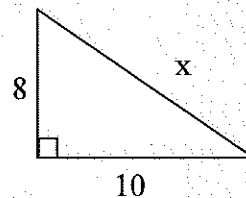
28. In the diagram, find x .

- A 4
 B 8
 C 12
 D 20



29. For the right triangle, solve for x in simplified radical form.

- A 18
 B 14
 C $2\sqrt{41}$
 D $4\sqrt{41}$

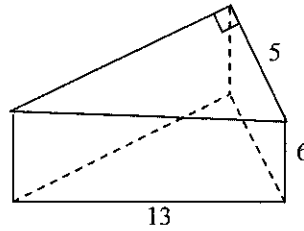


30. The hypotenuse of a 30° - 60° - 90° triangle measures 6. How long is the leg opposite the 60° angle?

- A 3
 B $3\sqrt{3}$
 C $6\sqrt{3}$
 D 12

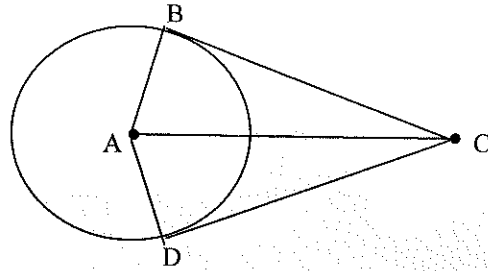
31. Find the volume of the right prism.

- A $180 u^3$
- B $240 u^3$
- C $360 u^3$
- D $390 u^3$



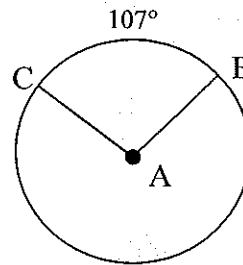
32. Given circle A with tangents BC and DC. If $DC = 20$, Find BC.

- A 20
- B 10
- C 25
- D 15



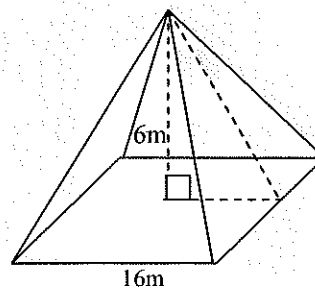
33. Given circle A with $m\widehat{BC} = 107^\circ$, find $m\angle BAC$.

- A 73°
- B 107°
- C 180°
- D 253°



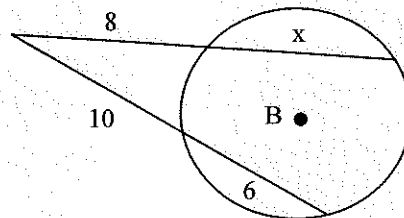
34. Find the total surface area of the pyramid.

- A $96 m^2$
- B $320 m^2$
- C $336 m^2$
- D $576 m^2$



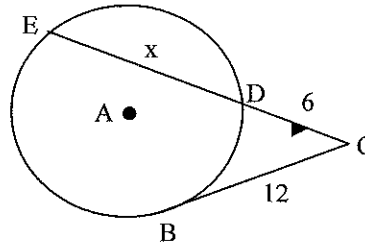
35. Given circle B, find x.

- A 12
- B 10
- C 8
- D 6



36. Given tangent \overline{BC} to circle A, solve for x .

- A 6
- B 12
- C 16
- D 18



37. The volume of a cone is $256\pi \text{ in}^3$ and the height of the cone is 12 in. Find the radius of the cone.

- A 8 in.
- B 16 in.
- C 32 in.
- D 64 in.

38. What is the center and radius of the circle $x^2 + (y - 5)^2 = 36$

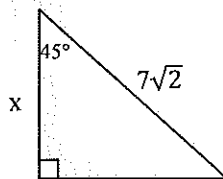
- A center (1, 5) radius 36
- B center (0, -5) radius 6
- C center (0, -5) radius 18
- D center (0, 5) radius 6

39. Find the radius of a circle with a circumference of 36π .

- A 18
- B 6
- C 72
- D 36

40. Find the value of x .

- A 7
- B 14
- C $7\sqrt{2}$
- D $14\sqrt{2}$

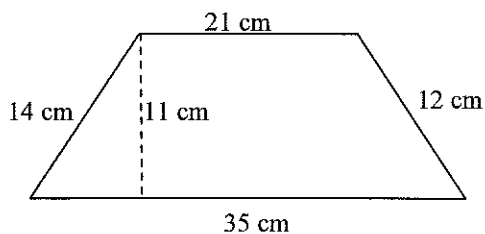


41. Find the area of the triangle if the height is 7 inches and the base is 15 inches long.

- A 52.5 in^2
- B 59.5 in^2
- C 105 in^2
- D 127.5 in^2

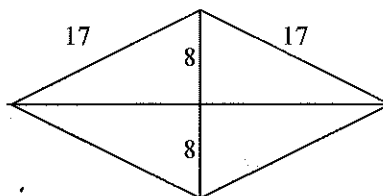
42. Find the area of the trapezoid.

- A 231 cm^2
- B 392 cm^2
- C 308 cm^2
- D 336 cm^2



43. Find the area of the rhombus.

- A 136 u^2
- B 240 u^2
- C 480 u^2
- D 544 u^2

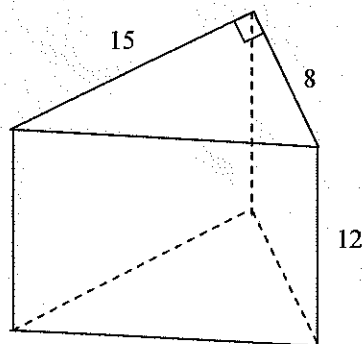


44. Find the area of a regular heptagon if its apothem is 9 and each of its sides is 8.6.

- A $38,7 \text{ u}^2$
- B $77,4 \text{ u}^2$
- C $270,9 \text{ u}^2$
- D $541,8 \text{ u}^2$

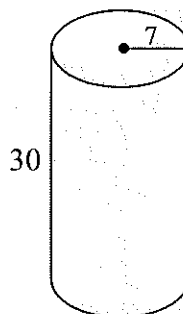
45. Find the total surface area of the prism.

- A 480 u^2
- B 1440 u^2
- C 720 u^2
- D 600 u^2



46. Find the lateral area of the right circular cylinder. Leave answer in π units.

- A 210π
- B 420π
- C 518π
- D 660π



47. Find the volume of the sphere with radius 6 units. Leave answer in π form.

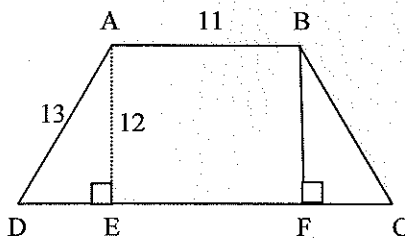
- A $288\pi u^3$
- B $905\pi u^3$
- C $72\pi u^3$
- D $864\pi u^3$

48. The height of a parallelogram is 12 ft and the area is 276 ft^2 . Find the base of the parallelogram.

- A 11.5 ft
- B 16.6 ft
- C 23 ft
- D 46 ft

49. If $\overline{AD} \cong \overline{BC}$ in isosceles trapezoid ABCD, find DC.

- A 16
- B 21
- C 35
- D 36



50. The two polygons are similar. The area of one polygon is given. Find the area of the larger polygon to the nearest 10^{th} .

- A 9 yd^2
- B 14.4 yd^2
- C 24 yd^2
- D 25 yd^2

