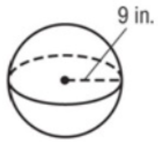
11. What is the volume of a sphere with a radius of 9 inches?



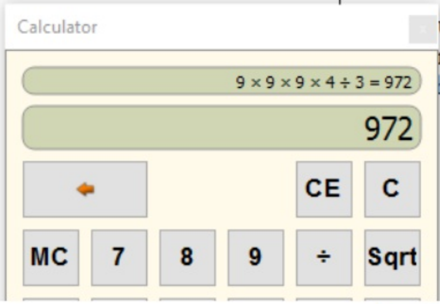
$\frac{4}{3}\pi r^3$

A. 1016π in^3

B. 972π in^3

C. 486π in^3

D. 324π in^3



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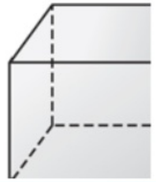
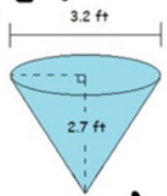


D. no relationship

17. About how much water can the paper drinking cup shown below hold? Use 3.14 for π. Round to the nearest tenth.

$\frac{3.3}{2} = 1.6 = r$

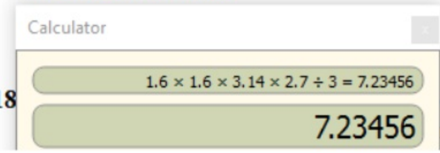


$\frac{1}{3}\pi r^2 h$

F. 17.2 cubic inches

G. 7.2 cubic inches

H. 5.7 cubic inches



18 figures
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C
F
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21. W
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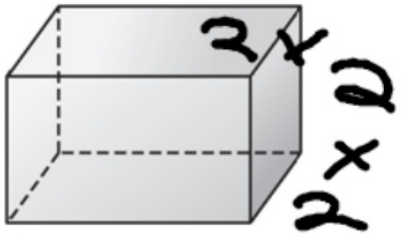
15. Suppose the dimensions of a rectangular prism are enlarged by a factor of 2. By what scale factor will the volume of the prism be scaled?



A. $\frac{1}{2}$

B. 8

C. 6

PERIOD _____

)

A cone has a height of 24 inches, a slant height of 25 inches, and a diameter of 14 inches. What is the surface area of the cone?

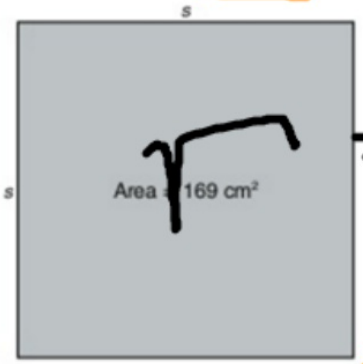
A. $1{,}176\pi$ in^2

B. 392π in^2

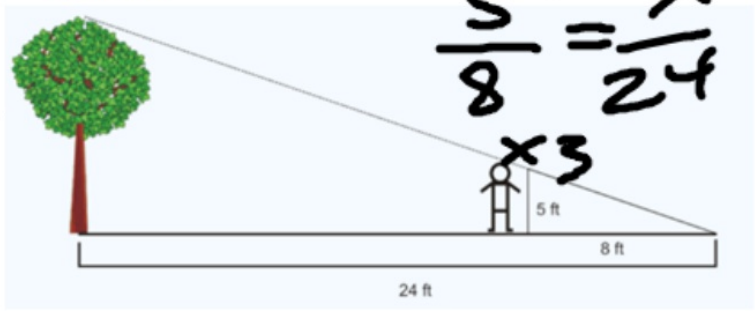
C. 224π in^2

D. 178π in^2

24. SHORT ANSWER The area of a square patio is 169 square feet. What is the perimeter of the patio?



22. Katie is 5 feet tall. She casts a 8-foot long shadow at the same time that a tree casts an 24-foot long shadow.



What is the height of the flagpole?

F. 10 ft

G. 25 ft

H. 15 ft

I. 30 ft

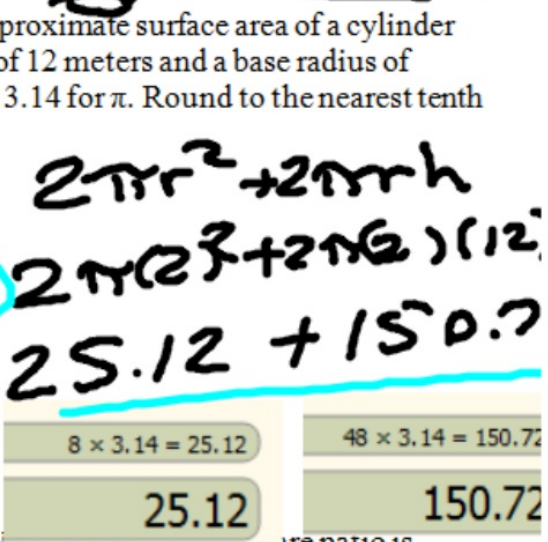
23. What is the approximate surface area of a cylinder with a height of 12 meters and a base radius of 2 meters? Use 3.14 for π. Round to the nearest tenth if necessary.

A. 242.1 m^2

B. 175.8 m^2

C. 150.7 m^2

D. 124.5 m^2



24. SHORT ANSWER The area of a square patio is 169 square feet. What is the perimeter of the patio?

Basic Algebra Final 2017 (continued)

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

)17

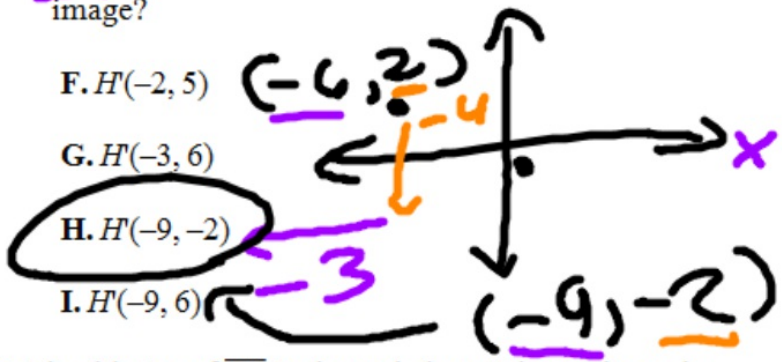
2. If point $H(-6, 2)$ is translated 4 units down and 3 units left, what are the coordinates of the translated image?

F. $H'(-2, 5)$

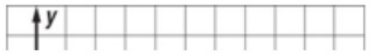
G. $H'(-3, 6)$

H. $H'(-9, -2)$

I. $H'(-9, 6)$



3. The dilation of $\overline{CD}$ is shown below. What is the scale factor of the dilation?



19. Which two points form a line that has a slope of -1?

A. (3, 6) and (–1, –4)

B. (4, 2) and (7, –1)

C. (–4, 7) and (–9, 5)

D. (3, –7) and (8, 4)

$\frac{-1-2}{7-4} = \frac{-3}{3}$

$\frac{4-(-7)}{8-3}$

20. What is the constant rate of change of the function represented in the table below?

x	y
–4	–9
–2	–3
0	3
2	9

2, 2, 2 → 6, 6, 6

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

F. 2

G. 3

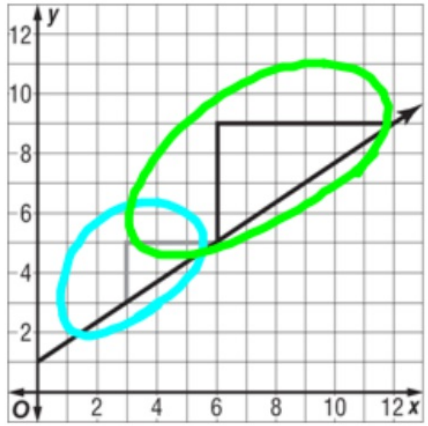
26 $\frac{2}{3} = \frac{4}{6}$

equivilant → these shapes are similar.

B. 175.8 in

C. 150.7 m^2

26. SHORT ANSWER What is the relationship between the slope of the line and the side lengths of the triangles?



27. What is the slope of the line that passes through points $R(2, 0)$ and $T(-4, -3)$?

A. 2

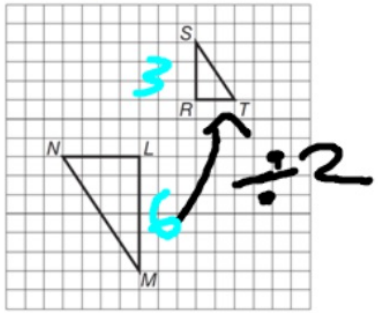
B. $\frac{1}{2}$

C. $-\frac{1}{2}$

D. -2

$\frac{0+(+3)}{2+(+4)} = \frac{3}{6}$

32. What is the scale factor of the dilated figure shown below, going from LMN to RST?



A. 0.25

B. 0.5

C. 2

D. 4