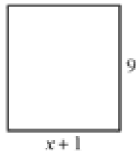


**Pre-Algebra Mastery Test #10 Review (Final)**

Find the value of  $x$  for the figure.

**1** Perimeter = 34



- 2** The smaller box is 2 feet tall and casts a shadow of 6 feet. The larger box is 10 feet tall. (The figures may not be drawn to scale.)



How long of a shadow does the larger box cast?

- 3** In 1983, the circulation of a local newspaper was 1830. In 1984, its circulation was 1270. Find the percent of change in the newspaper's circulation. Is this a percent of increase or decrease?

Find the intercepts of the equation's graph.

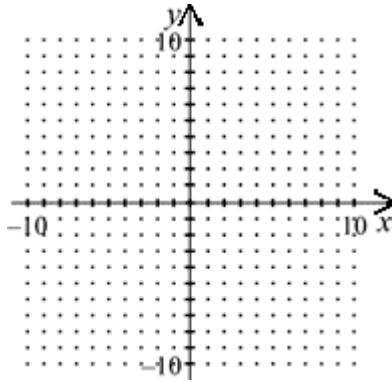
**4**  $-3x + 3y = 8$

Find the slope and  $y$ -intercept of the line with the given equation.

**5**  $8x + 4y = -96$

Graph the function.

**6**  $f(x) = \frac{4}{7}x - 3$



**7** Write a linear function  $g$  given that  $g(0) = 6$  and  $g(10) = 9$ .

**8** What are the solutions of the equation  $x^2 = 50$ ?

Use a calculator to solve the equation. Round to the nearest tenth when necessary.

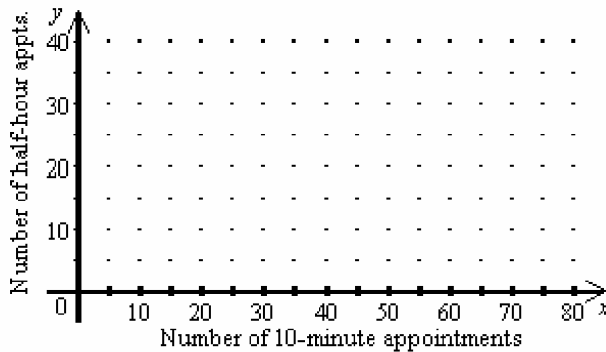
**9**  $4x^2 = 1200$

Find the midpoint of the segment with the given endpoints.

**10**  $(-11, 11), (6, -16)$

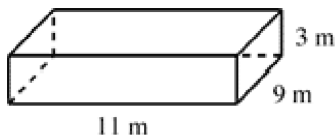
**11** Which expression is the simplest form of  $\sqrt{162x^2}$ ?

- 12** The lengths of the legs of a right triangle are 10 inches and 15 inches. What is the length of the hypotenuse in simplest form?
- 13** What is the distance between the points  $(-3, -1)$  and  $(9, -6)$ ?
- 14** A doctor's office schedules 10-minute and half-hour appointments. The doctor also makes hospital rounds for four hours each weekday. These activities are limited to 30 hours per week. The inequality  $10x + 30y \leq 600$  models the situation, where  $x$  represents the number of 10-minute appointments and  $y$  represents the number of half-hour appointments. Graph the inequality.



**Find the volume of the solid. Round to the nearest whole number.** (The figure may not be drawn to scale.)

**15**

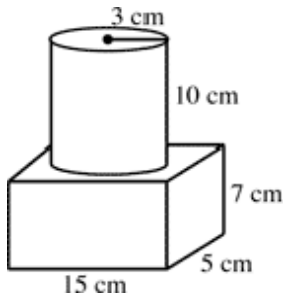


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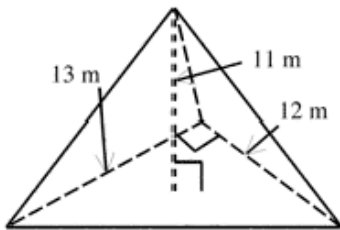
The solid shown is composed of a prism and a cylinder. Find the volume of the solid. Use 3.14 for  $\pi$  and round to the nearest whole number. (The figure may not be drawn to scale.)

16

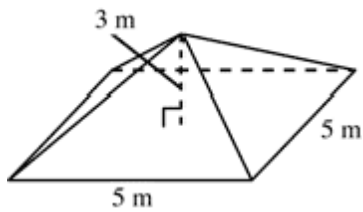


Find the volume of the pyramid. (The figure may not be drawn to scale.)

17



18

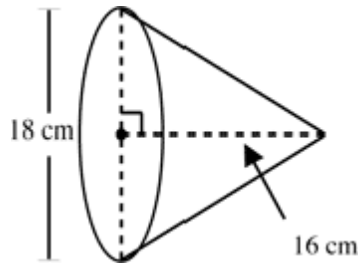


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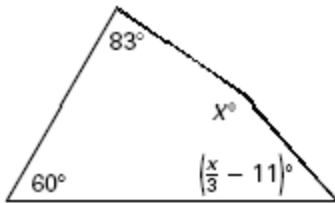
Find the volume of the cone. Use 3.14 for  $\pi$  and round to the nearest tenth.

19



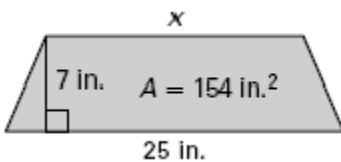
20 The ratio of the angle measures of a triangle is 6 : 11 : 19. What type of triangle is it?

21 Find the value of  $x$ .



22 What is the area of a parallelogram with a base of 8 meters and a height of 12 meters?

23 Find the value of  $x$ .



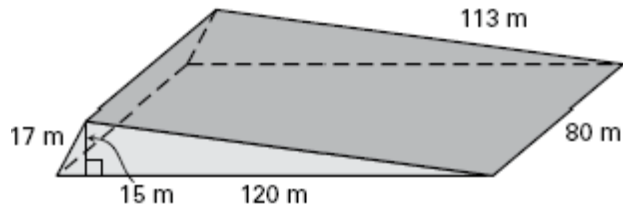
24 A circle has a radius of 21 inches. What is its approximate circumference?

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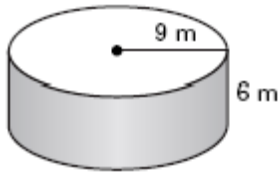
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25 A circle has an area of 254 square millimeters. What is its approximate radius?

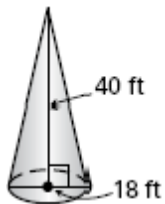
26 What is the surface area of the prism?



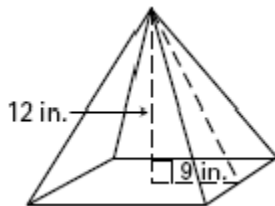
27 What is the approximate surface area of the cylinder?



28 What is the approximate surface area of the cone?

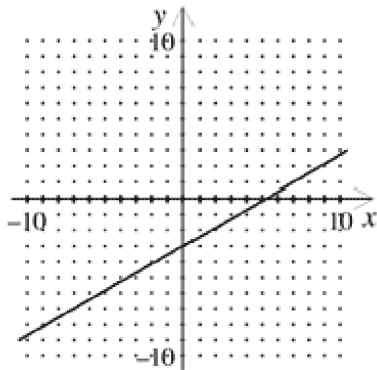


29 What is the surface area of the regular pyramid?

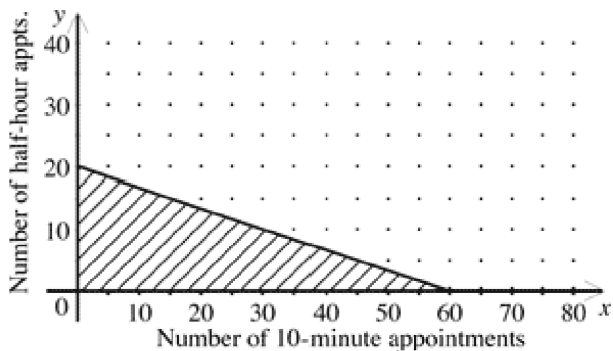


**Pre-Algebra Mastery Test #10 Review (Final)  
Answer Section**

- 1** 7
- 2** 30 ft
- 3** 30.6%; decrease
- 4** x-intercept:  $-\frac{8}{3}$ , y-intercept:  $\frac{8}{3}$
- 5** slope: -2; y-intercept: -24



- 6**
- 7**  $g(x) = \frac{3}{10}x + 6$
- 8**  $\pm 5\sqrt{2}$
- 9**  $\pm 17.3$
- 10**  $\left(-\frac{5}{2}, -\frac{5}{2}\right)$
- 11**  $9x\sqrt{2}$
- 12**  $5\sqrt{13}$  inches
- 13** 13



- 14**
- 15**  $297 \text{ m}^3$
- 16**  $808 \text{ cm}^3$
- 17**  $286 \text{ m}^3$

- 18  $25.0 \text{ m}^3$
- 19  $1356.5 \text{ cm}^3$
- 20 obtuse
- 21 171
- 22  $96 \text{ m}^2$
- 23 19 in.
- 24 132 in.
- 25 9 mm
- 26  $21,800 \text{ m}^2$
- 27  $847.8 \text{ m}^2$
- 28  $1413 \text{ ft}^2$
- 29  $864 \text{ in.}^2$