1. A's weight varied inversly as C's weight squared. When A weighed 20 kilograms, C weighed 10 kilograms. How much does A weigh when C weighs 5 kilograms?

2. Heather traveled the 320-mile trip in 2 hours more than it took Angela. This was because Angela traveled twice as fast as Heather. How fast did each travel, and for how long did each travel?

3. The ratio of two numbers is 8 to 5. Also, three times the larger number is 3 less than 5 times the smaller number. What are the numbers?

4. Use unit multipliers to convert 120 liters to cubic feet.

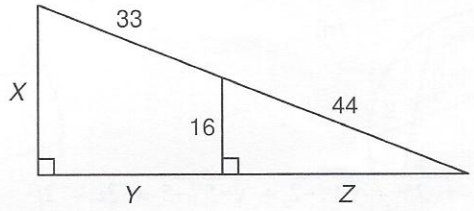
5. Solve: $\sqrt{x - 95} + \sqrt{x} = 19$

6. Solve: $-2^3 - 4^0 - 2^2(x - x^0) = 3^0(-2x - 5) + 6$

7. Solve: $\begin{cases} 3x + y + 4z = 15 \\ 2x - 2y + 3z = -3 \\ x - 2z = 0 \end{cases}$

8. Solve: $\begin{cases} \frac{3}{7}x + \frac{2}{5}y = 10 \\ 0.03x - 0.02y = -1.58 \end{cases}$

9. Find Y.



10. Find the equation of a line that passes through $(3, -5)$ and whose slope is $-\frac{3}{7}$.

11. Add: $-10\angle -35° + 4\angle 110°$

12. Convert $-8R - 5U$ into polar form.

13. Find the volume of a circular cone whose radius is 5 inches and whose height is 12 inches.

14. (a) Begin with $ax^2 + bx + c = 0$ and derive the quadratic formula by completing the square.

    (b) Solve $5 = 3x - x^2$ by using the quadratic formula.

15. Add: $\frac{3x + 1}{x^2 - 16} + \frac{2x}{4 - x}$

Simplify:

16. $2\sqrt{6} - 3\sqrt{\frac{1}{6}} + 2\sqrt{24}$

17. $\frac{\sqrt{3} + 3}{\sqrt{3} - \sqrt{5}}$

18. Find x: $\frac{z}{m^2} = \frac{c}{m}\left(\frac{x}{a} + y\right)$

Simplify:

19. $\cfrac{a}{c + \cfrac{m}{x + \cfrac{1}{z}}}$

20. $\frac{2 - 3i}{i - 5}$