1. Find m, n, and p.
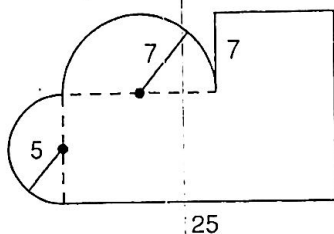
2. Find a, b, and c.
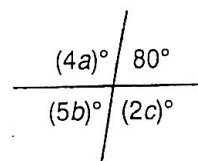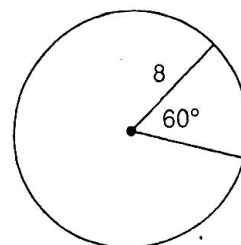
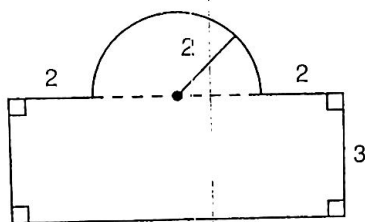3. The complement of an angle is 37°. What is the measure of the angle?

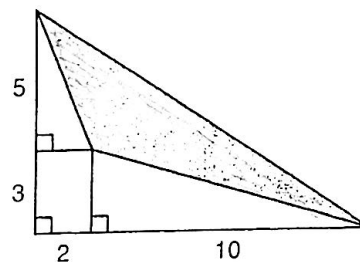4. Find the perimeter of this figure. All angles that look square are square. Dimensions are in meters.

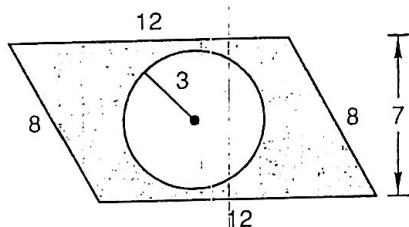5. Find the area of the 60° sector of the circle. Dimensions are in inches.

6. The figure shown is the base of a cone whose altitude is 5 centimeters. What is the volume of the cone? Dimensions are in centimeters.
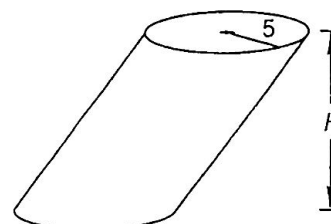
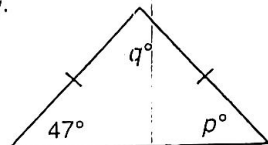7. Find the area of the shaded region. Dimensions are in feet.

8. Find the area of the shaded region. Dimensions are in centimeters.

9. The volume of this circular cylinder is 750π in³. What is the height of the cylinder?

10. Find p and q.

11. Find y.
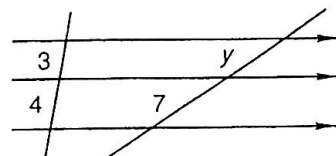
12. Find the volume and the surface area of a sphere whose radius is 9 inches.

Simplify. Write the answer with exponential expressions in the numerator.

13. $\dfrac{\left(xy^2\right)^0 x^2 y}{x\left(y^{-3}\right)^3}$

14. $\dfrac{\left(x^3 y^{-1}\right)^{-2} z^{-2}}{\left(y^3 z y^{-2}\right)^5}$

15. $\dfrac{x^3 y^2 z^{-2}}{\left(xw^0\right)^{-2} z^{-1} x^2 w^3}$

Simplify:

16. -4^{-3}

17. $\dfrac{1}{-3^{-3}}$

18. $-5^2 - [-3^0 - (2 - 3) - 3]$

19. $-|-3 - 5| - (-3)^2 - 3^2$

20. $-4[6^0 - 5(3 - 6) - 3^3]$

Algebra 2 by Saxon

1. Find y, A, and B.

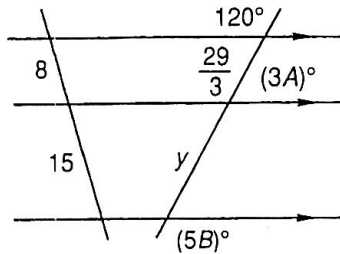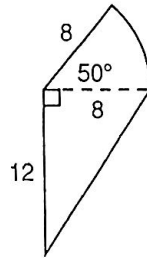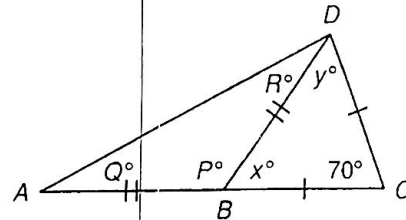2. This figure is the base of a cone that is 8 inches tall. What is the volume of the cone? Dimensions are in inches.

3. The measure of angle BCD is $70°$, as shown. Find x, y, P, R, and Q.

4. The surface area of a sphere is 86π ft². What is the diameter of the sphere?

Evaluate:

5. $a - |b|a^2 - ba$ if $a = -3$ and $b = -4$

6. $xy^2(xy - x^2)$ if $x = -\dfrac{1}{3}$ and $y = \dfrac{1}{6}$

Simplify by adding like terms:

7. $2ab^{-1} + \dfrac{4a^2y^{-1}}{a} - \dfrac{7x^{-1}y}{y^{-2}}$

8. $-3xy + \dfrac{8xy^{-1}x^0}{y^{-2}} - \dfrac{3x^2x^{-1}x}{\left(x^{-1}\right)^{-1}}$

Simplify:

9. $\dfrac{xb^0y\left(x^{-2}b^{-2}\right)^2}{xb\left(by^0\right)xby}$

10. $\dfrac{3\left(m^{-3}\right)^{-2}nm^3n^{-1}}{mm^2m^0m^{-7}\left(m^3\right)^3}$

11. $-5^0[-3^3 - 3(-3 - 2)](-4^0)$

12. $-2^{-3} - \dfrac{3}{-3^{-2}} + 3^0$

13. $-4^2 + (-2)^4 - 3^3 - |-4 - 4|$

Solve:

14. $0.004x + 0.5 = 3.05$

15. $4\dfrac{2}{3}x - 2\dfrac{1}{5} = 3\dfrac{1}{6}$

16. $-5 - 3^2 - 3(x - 2) = 3[(x - 2)3 - 4]$

17. Expand: $\dfrac{ab}{m}\left(\dfrac{-2m^{-2}}{ba} + \dfrac{3m}{a^{-1}b}\right)$

18. If P is the measure of an angle, $180 - P$ is the measure of the supplement of the angle. If the measure of an angle equals three times the measure of its supplement, what is the measure of the angle?

19. Find three consecutive odd integers such that three times the sum of the first and third is 18 greater than 4 times the second.

20. Research showed that 0.283 of the employees were totally loyal. If the corporation had 6000 employees, how many of them were not loyal?

Algebra 2 by Saxon

1. Thirty percent of what number is 480? Draw a diagram of the problem.

2. Forty percent of the receipts was used to pay the employees. If $60,000 was not spent paying the employees, what was the total amount of receipts?

3. Find three consecutive even integers such that 3 times the first is 26 less than twice the sum of the last two.

4. The number that rode in columns was $3\frac{2}{3}$ times the number that rode in rows. If 2200 rode in columns, how many rode in rows?

5. In the figure $WX = WY$. Find a, b, and c.

6. Find y.
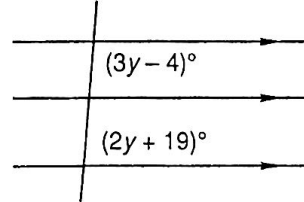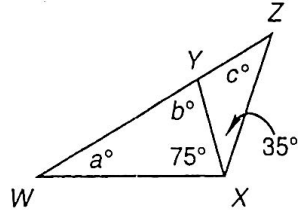
7. Find a, R, and T.
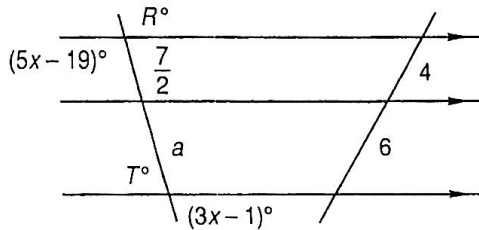
8. Use the Pythagorean theorem to find x.
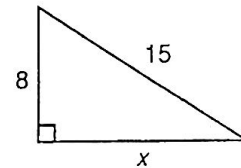
Solve:

9. $2\frac{1}{4}n - \frac{5}{12} = \frac{3}{4}$
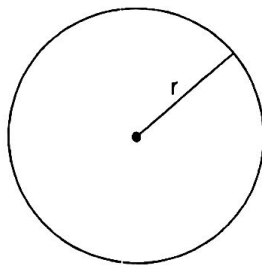
10. $-3(3x + 1) - 2^2 + 4^0 = -2x(-3 + 2x^0)$

Expand:

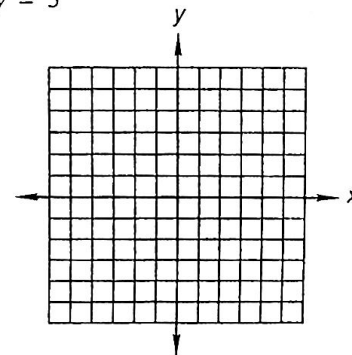11. $\dfrac{p^{-2}c^3}{c^{-2}}\left(2p^2c - \dfrac{3pcp^2}{pc^2p}\right)$

12. $\dfrac{xy^3}{a}\left(\dfrac{2x^{-1}a}{y^3} - \dfrac{2ay}{x}\right)$

13. The area of the circle is 25π m². What is the circumference of the circle?

14. Graph on a rectangular coordinate system: $3x + y = 3$

Evaluate if $x = -\dfrac{1}{2}$ and $y = -\dfrac{1}{3}$:

15. $xy - x(y - x)$

16. $x^2y(x - y) - x^0$

Simplify:

17. $\dfrac{2^{-3}aaa^0\left(x^{-3}c\right)^{-2}}{\left(a^3c^{-1}\right)^2 acc^{-2}}$

18. $-2^0(-4^0 - 3^0 - |-2|) - (-4)(-5)$

19. $-\dfrac{1}{3^{-2}} - 2^3 - 2$

20. Simplify by adding like terms: $\dfrac{2m^3x^2}{xa} - \dfrac{2m}{x} - \dfrac{3mx^3a}{xa^3m^{-2}} + \dfrac{2x^{-1}m^2}{m}$

Algebra 2 by Saxon

1. After the storm, the number of destroyed flowers was 240 percent more than before the storm. If 68,000 flowers were destroyed after the storm, how many had been destroyed before the storm?

2. A number is tripled and then the product is increased by 4. This sum is then multiplied by -2, and the result is 16 greater than twice the opposite of the number. What is the number?

3. Find three consecutive even integers such that 6 times the first is 16 less than four times the sum of the second and third.
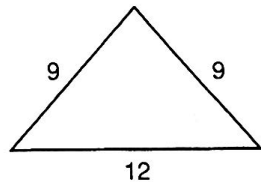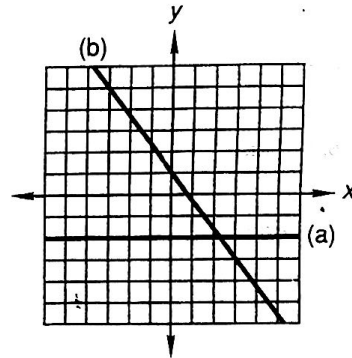
4. Find a and b.

$(2b + 36)°$

$a°$

$60°$

$(7b + 12)°$
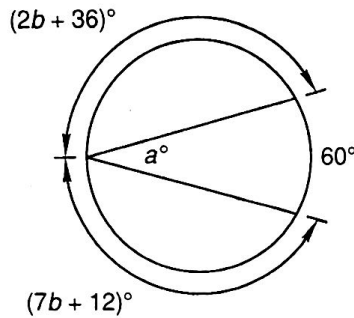
5. $\overline{XY}$ is a segment drawn along one side of a triangle. If $b = 150$ and $c = 70$, find a.

$c°$

$a°$ $b°$

X Y
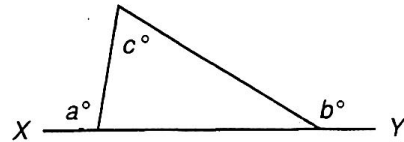
6. Find the area of this triangle. Dimensions are in centimeters.

9   9

12

7. Find the equations of lines (a) and (b).

Add:

8. $4 + \dfrac{c}{4y^2}$

9. $\dfrac{a}{py} + y + \dfrac{a^2}{p^2}$

10. Find the distance between $(-2, 3)$ and $(4, 5)$.

11. Graph (a) $x = 3$ and (b) $3x - 4y = 12$ on a rectangular coordinate system.

Solve:

12. $0.5x - 0.5 - 0.05 = 0.55$

13. $-2^0(m^0 - 2) - 3(m - 3) = -2(m + 3^0)$

14. Expand: $\dfrac{2^{-3} a^{-3}}{c}\left(2a^3 c - \dfrac{8a^3}{c^2} \right)$

15. Simplify: $\dfrac{4^{-2} m m m^0 \left(m^{-3} p \right)^{-3}}{\left(m^3 p^{-1} \right)^3 m p p^{-4}}$

16. Simplify by adding like terms: $-\dfrac{4ax}{y} + \dfrac{6a^3 a^{-2} y^{-1}}{x} - \dfrac{5y^{-1} a^{-3}}{a^{-4} x^{-1}}$

17. Evaluate: $a^2 - ya - y(a - y)$ - if $y = -3$ and $a = \dfrac{1}{3}$

18. Simplify: $4^0 - \dfrac{64}{2^4} - (-3)^0 - 3^0 - 2\left[(-3 - 2^0) - (-3 - 2)\right]$

19. Use substitution to solve: $\begin{cases} x + 3y = -3 \\ 3x - 5y = 19 \end{cases}$

20. Find the equation of the line that passes through $(-2, 4)$ and $(5, 3)$.

Algebra 2 by Saxon