

2. Convert Between SI Units for Area

Determine the area of each rectangle for the given square unit



Chp 2. Surface Area and Volume

1. Find the surface area and volume for each 3-D figure.



2. The surface area of a sphere is 459 cm^2 . Find the diameter.



Remember to check your calculator first!

Chp 3. Trigonometry: SOH-CAH-TOA

- 1. Solve the following.a) $\tan 72^\circ =$ b) $\sin 42^\circ =$ c) $\cos 68^\circ =$
- d) $\tan A = 2.580$ e) $\sin A = 0.4384$
- f) $\cos A = 0.2079$

2. Find the unknown values.



3. Solve the following angles and lengths.



4. Determine the height of the building if the angle of depression is 40°. The building is 12 feet from the house. *horizontal*



Chp 4. Exponents and Radicals

- 1. Determine whether each of the following is a perfect square, perfect cube, both or neither.
 - a) 196_____ b) 81 _____ c) 343 _____
- 2. Determine the prime factorization for each value.

a) 200_____ b) 729 _____

3. Evaluate.
a)
$$\sqrt{289}$$
 b) $\sqrt[3]{5832}$
Convert from a power to a radical
a) $64^{1/2}$ b) $16^{3/4}$ c) $(8x^2)^{1/3}$
Convert from a Radical to a Power.
a) $\sqrt[4]{4^3}$ b) $\sqrt[5]{3^4}$ c) $\sqrt{y^3}$
Convert Mixed Radicals to Entire Radicals
a) $5\sqrt{11}$ b) $2\sqrt[3]{5}$ c) $1.5\sqrt[3]{6}$
Convert Entire Radicals to Mixed Radicals
a) $\sqrt{27}$ b) $\sqrt{50}$ c) $\sqrt[4]{80}$

8. Write each expression with positive exponents. $(4)^{-2}$

a)
$$3c^{-4}$$
 b) $\left(\frac{4}{7}\right)^{-2}$ c) $\frac{2^{-3}}{3^{-2}}$ d) $-5x^{-3}y^{-2} =$

9. Simplify each expression. State the answer using positive exponents.

a)
$$[(4)(2^{-3})]^{-2}$$
 b) $(-3m^2n)(-4m^4n^{-2})$ c) $(\frac{6mn^3}{4m^2n})^2$

d)
$$\frac{\left(4x^{\frac{1}{3}}\right)^{\frac{1}{2}}(9x)^{-\frac{3}{2}}}{(27x)^{-\frac{1}{3}}}$$
e)
$$\frac{\left(q^{-\frac{2}{3}}\right)\left(q^{\frac{1}{3}}\right)}{\frac{q^{\frac{4}{3}}}{q^{\frac{4}{3}}}}$$

Chp 5. Polynomials

Note that all tiles are 1.What product does the diagram below represent? A **black**.

2. Find the product .

a) $(x-3)(2x+1)$ b) $(5m-1)(2m-3)$ c) $(x+2)(2x^2-1)(2m-3)$	c) $(x+2)(2$	$(x + 2)(2x^2 - 5x)$	c) $(x+2)(2x^2-5x+1)$		(x-3)(2x+1)	a)
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d)
$$(x+14)(x-14)$$
 e) $(y+10)^2$ f) $(8-m)^2$

3. Factor the polynomials.

a) $15x^2 + 10x^2$	b) $7a^2b - 28ab + 14ab^2$

- d) $y^2 + 8xy + 2y + 16x$ c) 3x(x-4) + 5(x-4)
- e) $x^2 + 4x + 6$ f) $x^2 - 29x + 28$

g)
$$3x^2 + 2x + 4$$
 h) $6x^2 - 5xy + y^2$

4. Factor these special polynomials: Difference of Squares and Perfect Squares

a)
$$x^2 - 9$$

b) $25a^2 - 16c^2$
c) $x^2 - 6x + 9$
d) $2x^2 - 44x + 242$

e) $16x^2 - 4y^2$ f) $9x^3 - 36x$

Chp 6. Relations and Functions



1. Use set notation to determine the domain and range of each relation.

4. Use the slope formula to determine the slope of the line passing through each pair of points.

a) A(2, -1), B(3, 4) b) C(0, 7), D(-3, 7) c) G(4, -2), H(4, -5)

Chp 7. Linear Equations and Graphs

1. Determine the equation of each line.



- 2. Determine the slope and y-intercept of each line. a) 4x + 2y = 12b) 3x - 2y - 600 = 0
- 3. Given the equation y = 4x + b, and a point on the graph of a line, find b.
 a) (2, 4)
 b) (-3, 7)
- 4. Convert slope-intercept form to the General Form. a) $y = -\frac{2}{3}x + 6$ b) $y = \frac{3}{4}x - 2$
- 5. Given the following equation, find the x-intercept and y-intercept. Then graph each equation on the grid.

a)
$$y = 7x + 9$$
 b) $4x - 6y - 12 = 0$

6. Write the equation of a line, given a point on the line and the slope, m.

a) Given (-2, 5) and slope = -3 b) Given (3,-4) and slope = 2

7. State whether the lines in each pair are parallel, perpendicular or neither.

a)
$$y = 4x + 3$$

 $y = 4x - 5$
b) $y = 3x - 6$
 $y = -2/3x + 4$
c) $y = 2x + 6$
 $6x + 3y + 3 = 0$

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- 8. Write an equation perpendicular to y = 3x 4 and passes through (6, 5)
- 9. Write an equation perpendicular to: 2x y + 4 = 0 and passes through (1,-6)

Chp 8. Solving Systems of Linear Equations Graphically

- 1. Is the given point a solution to the system of linear equations? Justify your answer.
 - a) y = 5x + 13 (4, 7) y = -7x - 35 (4, 7) x + 3y = -29 (-5, -8)
- 2. Predict the number of solutions for each system of linear equations. Justify your answers. a) y = 5x - 1 y = 4x + 3b) 2x + 3y = 20 6x - y = 20c) x - 5y = 1-x + 5y = 1
- 3. In the system of linear equations y = 8x + 5 and y = 8x + b, what values of b will result in a system that has
 - a) **no** solution?

b) an **infinite** number of solutions?

4. Graph the system of linear equations on the grid. Determine the solution to the system.

3x + 4y = 17x - 2y = -1



#8 and #9: Also find the equation of the parallel line.

Chp 9. Solving Systems of Linear Equations Algebraically

- 1. Solve
 b) x + y = 9 c) $\frac{x}{2} + \frac{y}{3} = 6$

 y = 4x + 1 -10x + 6y = 6 3x 2y = 12

 2. Solve 1
 x + 5 y = 4x + 1 y = 4x + 1

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- 3. A small plane took 3 hours to fly 960 km from Ottawa to Halifax with a tailwind. On the return trip, flying into the wind, the plane took 4 hours. Find the wind speed and the speed of the plane in still air.

Equation 1:	
Equation 2:	

Wind speed	
Plane speed	

4. A spa is offering two deals. Clients can get five facials and three manicures for \$128, or two facials and three manicures for \$62. What are the special prices of a facial and a manicure? (2 marks)

Equation 1:______

Facial	
Manicure	_

5. For a spirit rally, students on the school baseball team sell T-shirts. The cost of the T-shirts includes a \$500 design fee plus \$5 per T-shirt. They plan to sell the T-shirts for \$25 each. The break-even point is when the cost to design and purchase the items equals the money earned by selling the items. How many T-shirts must the team sell in order to break even?

Equation 1 (Cost): ______ Equation 2 (Money earned):_____