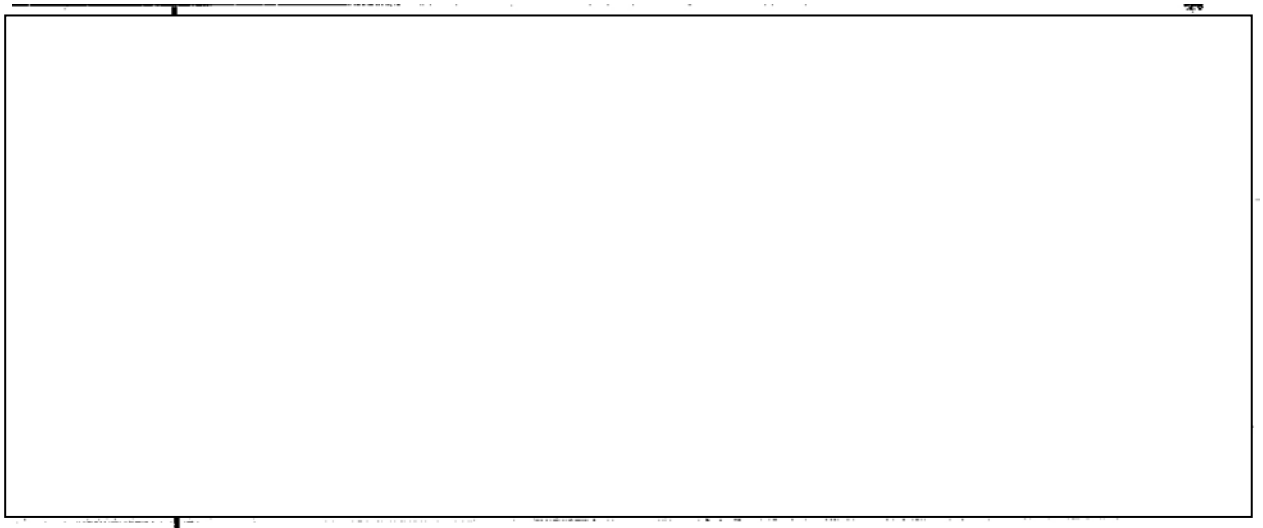
Assignment 1-3
Solving Equations



Solving Linear Equations

Chapter 1-3

Solve each equation.

(28) $x - 6 = -20$

$+6 \quad +6$

$x = -14$

(29) $\left(-\frac{3}{2}\right)\left(-\frac{2}{3}a\right) = (14)\left(-\frac{3}{2}\right)$

$a = \frac{-42}{2}$

$a = -21$

(30) $7 + 5n = -58$

$-7 \quad -7$

$\frac{5n}{5} = \frac{-65}{5}$

$n = -13$

Students should show operation done to BOTH sides of an equation to make use of

Additive Inverse Property

$6 - 6 = 0$

& Multiplicative Inverse

$\frac{3}{2} \cdot \frac{2}{3} = 1$

$\frac{5}{5} = 1$

Chapter 1-3 continued

(31) $3w + 14 = 7w + 2$

$-3w \quad -3w$

$14 = 4w + 2$

$-2 \quad -2$

$\frac{12}{4} = \frac{4w}{4}$

$\boxed{3 = w}$

(32) $\frac{n}{4} + \frac{n}{3} = \frac{1}{2}$

use common Multiple to remove Fractions

$12\left(\frac{n}{4} + \frac{n}{3}\right) = \frac{1}{2}(12)$

$3n + 4n = 6$

$\frac{7n}{7} = \frac{6}{7}$

$\boxed{n = \frac{6}{7}}$

(33) $5y + 4 = 2(y - 4)$

$5y + 4 = 2y - 8$

$-2y \quad -2y$

$3y + 4 = -8$

$-4 \quad -4$

$\frac{3y}{3} = \frac{-12}{3}$

$\boxed{y = -4}$

Chapter 1-3 continued...

Let x = number of nickels

(34) $0.98 = 2(0.25) + 1(0.10) + 3(0.01) + x(0.05)$

$0.98 = 0.50 + 0.10 + 0.03 + 0.05x$

$0.98 = 0.63 + 0.05x$

$-0.63 \quad -0.63$

$\frac{0.35}{0.05} = \frac{0.05x}{0.05}$

$7 = x$

she has 7 nickels

* assign a variable to an unknown (# of nickels)

Solve each equation or formula for the specified variable

(35) $Ax + By = C$, for x

$-By \quad -By$

$\frac{Ax}{A} = \frac{C - By}{A}$

$x = \frac{C - By}{A}$

* Use inverse properties w/ variables

(36) $\frac{a - 4b^2}{2c} = d$, for a

$2c \cdot \frac{a - 4b^2}{2c} = d \cdot 2c$

$a - 4b^2 = 2cd$

$+4b^2 \quad +4b^2$

$a = 2cd + 4b^2$

Chapter 1-3 continued...

(37) $A = p + prt$, for p

$\frac{A}{1+rt} = \frac{p(1+rt)}{1+rt}$

$\boxed{\frac{A}{1+rt} = p}$

* Do the "reverse of the distributive property" to seperate "p" from two terms

(38) $d = b^2 - 4ac$, for c

$\frac{-b^2}{} \quad \frac{-b^2}{}$

$\frac{d - b^2}{-4a} = \frac{-4ac}{-4a}$

$\boxed{\frac{d - b^2}{-4a} = c}$

(39) Given: height = 8 inches
Volume = 18.84 in.^{3}
find radius

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

$\frac{3V}{\pi h} = \frac{\pi r^2 h}{\pi h}$

← Could be solved by substituting values first

$\frac{3V}{\pi h} = r^2$

$\sqrt{\frac{3V}{\pi h}} = \sqrt{r^2}$

$\sqrt{\frac{3V}{\pi h}} = r$

$= \sqrt{\frac{3(18.84)}{\pi \cdot 8}} = r = \boxed{1.499 \text{ in}}$

Assignment 1.3
Solving Equations

Solve each equation. Check your solution.

x – 6 = -20 -20+6= ___
+ 6 + 6
x = ___

A) x = -14

B) x = 14

$\frac{-2}{3}a = 14$

$\frac{-3}{2} \times \frac{-2}{3}a = 14 \times -3/2$

14 x -3/2 = ○ → a = ○

A) a = 21

B) a = -21

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7 + 5n = - 58 -58 – 7 = -65
-7 -7
5n = -65 -65 ÷ 5 = □ → n = □
5 5

A) 13

B) 5

3w + 14 = 7w +2 7w -3w = 4w
-3w -3w
14= 4w +2
-2 -2 14 -2 = 12

$\frac{12}{4} = \frac{4w}{4}$ 12 ÷ 4 = △ → = w

A) 3

B) 2

Choice Strategy

Assignment 1.3
Solving Equations

$\frac{n}{4}+\frac{n}{3}=\frac{1}{2}$

12(n/4 + n/3) = ½ (12)

12 ÷ 4 = ☐ 12 ÷ 2 = ☐

12 ÷ 3 = ☐

☐ + ☐ = ☐

☐ = ☐

7

n = ☐

A) 6/7

B) 1/7

5y + 4 = 2(y-4) 2 x y = 2y 2 x -4 = -8

5y + 4 = 2y + -8

- 2y - 2y

3y +4 = -8

-4 -4

-8 + -4 = -12

$\frac{3y}{3}=\frac{-12}{3}$ 12 ÷ 3 = ☐

y = ☐

A) y = 4

B) y = -4

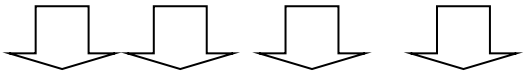
Choice Strategy

Assignment 1.3
Solving Equations

MONEY

If Tabitha has 98 cents and you know she has 2 quarters, 1 dime, and 3 pennies, how many nickels does she have?

.98 = (2 x .25) + (1 x .10) + (3 x .01) + (n x .05)



.98 = 0.50 + 0.10 + 0.03 + .05n

0.50 + 0.10 + 0.03 = 0.63

.98 = 0.63 + .05n
-0.63 -0.63

.98 - 0.63 = ☐

☐ = .05n

.05

☐ ÷ ☐ = ☐

n = ☐

She has ☐ nickels.

A) she has 7 nickels

B) she has 12 nickels

Assignment 1.3
Solving Equations

Solve each equation or formula for the specified variables.

$Ax + By = C$ for x

$-By \quad -By$

$\frac{Ax}{A} =$ ☐

$x =$ ☐

A) $x = \frac{C-By}{A}$

B) $x = \frac{C+By}{A}$

$\frac{a - 4b^2}{2c} = d$ for a

$2c \times \frac{a - 4b^2}{2c} = d \times 2c$

$a - 4b^2 = 2cd$

$+4b^2 \quad +4b^2$

☐

A) $a = 4cd + 4b$

B) $a = 2cd + 4b^2$

$A = p + prt$ for p

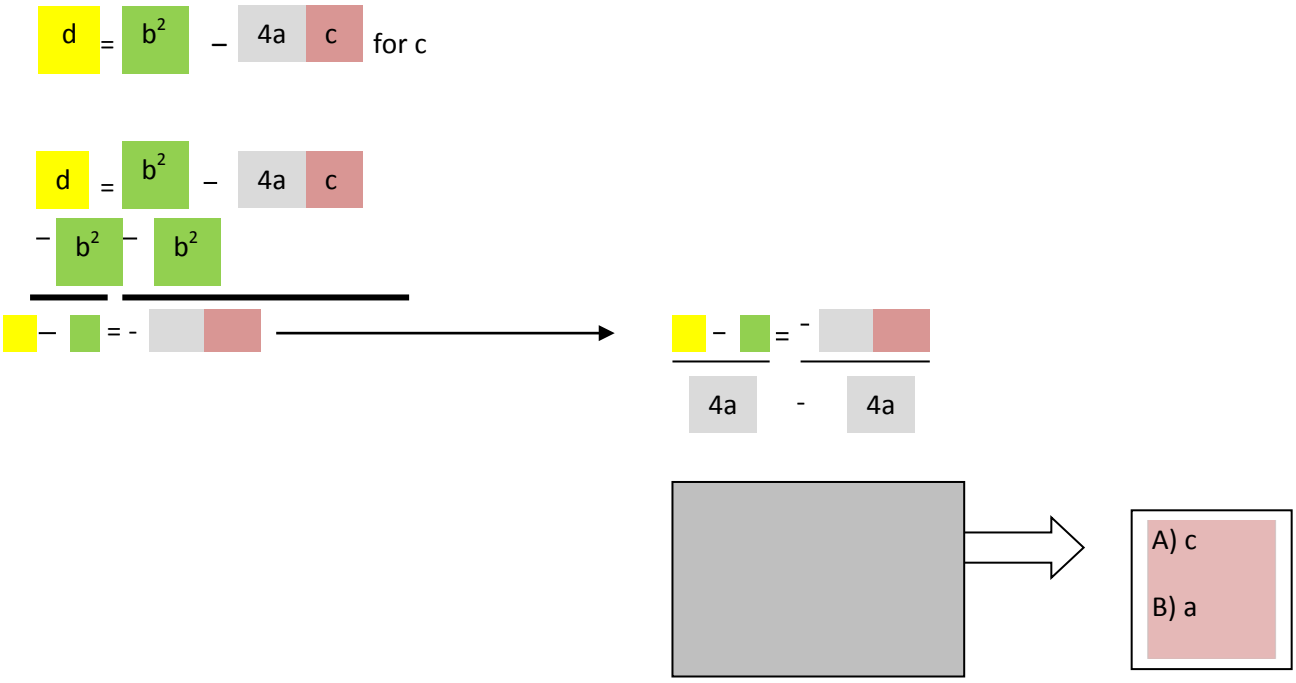
$\frac{A}{1 + rt} = \frac{p(1 + rt)}{1 + rt}$

☐

A) $\frac{A}{1+rt} = p$

B) $\frac{A}{12r} = p$

Assignment 1.3
Solving Equations



Choice Strategy

Assignment 1.3
Solving Equations

GEOMETRY

Alex wants to find the radius of the circular base of a cone. He knows the height of the cone is 8 inches and the volume of the cone is 18.84 cubic inches. Use the formula for volume of a cone, $V = 1/3\pi r^2 h$, to find the radius.

$V = 1/3\pi r^2 h$

$3 \times 18.84 = 1/3\pi r^2(8) \times 3$ $\qquad$ $3 \times 18.84 = 56.52$

$$\frac{56.52}{\pi(8)} = \frac{\pi r^2(8)}{\pi(8)}$$

$$\frac{56.52}{\pi(8)} = r^2$$

$$\sqrt{\frac{56.52}{\pi\,(8)}} = \sqrt{r^2}$$

$$\sqrt{\frac{\square}{\pi\,(8)}} = r$$

A) 1.499 in
B) 4.9 in

Choice Strategy

Assignment 1.3
Solving Equations

Solve each equation. Check your solution.

x – 6 = -20 -20+6= ___
+ 6 + 6
x = ___

$\frac{-2}{3}a = 14$

$\frac{-3}{2} \times \frac{-2}{3}a = 14 \times -3/2$

14 x -3/2 = ◯ → a = ◯

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7 + 5n = - 58 -58 – 7 = -65
-7 -7
5n = -65 -65 ÷ 5 = ☐
5 5

n = ☐

3w + 14 = 7w +2 7w -3w = 4w
-3w -3w
14= 4w +2
-2 -2 14 -2 = 12

$\frac{12}{4} = \frac{4w}{4}$ 12 ÷ 4 = △ → = w

Closed last step Strategy

Assignment 1.3
Solving Equations

$\frac{n}{4}+\frac{n}{3}=\frac{1}{2}$

$12(n/4 + n/3) = ½ (12)$

$12 \div 4 =$ ☐ $\quad 12 \div 2 =$ ☐

$12 \div 3 =$ ☐

☐ + ☐ = ☐

☐ = ☐

7

n = ☐

$5y + 4 = 2(y-4)$ $\quad 2 \times y = 2y$ $\quad 2 \times -4 = -8$

$5y + 4 = 2y + -8$

$-2y \quad -2y$

$3y + 4 = -8$

$-4 \quad -4$

$-8 + -4 = -12$

$\frac{3y}{3} = \frac{-12}{3}$

$12 \div 3 =$ ☐

y = ☐

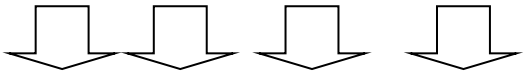
Closed last step Strategy

Assignment 1.3
Solving Equations

MONEY

If Tabitha has 98 cents and you know she has 2 quarters, 1 dime, and 3 pennies, how many nickels does she have?

.98 = (2 x .25) + (1 x .10) + (3 x .01) + (n x .05)



.98 = 0.50 + 0.10 + 0.03 + .05n

0.50 + 0.10 + 0.03 = 0.63

.98 = 0.63 + .05n
-0.63 -0.63

.98 - 0.63 = ☐

☐ = .05n

.05

☐ ÷ ☐ = ☐

n = ☐

She has ☐ nickels.

Closed last step Strategy

Assignment 1.3
Solving Equations

Solve each equation or formula for the specified variables.

$Ax + By = C$ for x

$-By \quad -By$

$\frac{Ax}{A} = \square$

$\downarrow$

$x = \square$

$\frac{a - 4b^2}{2c} = d$ for a

$2c \times \frac{a - 4b^2}{2c} = d \times 2c$

$a - 4b^2 = 2cd$

$+4b^2 \quad +4b^2$

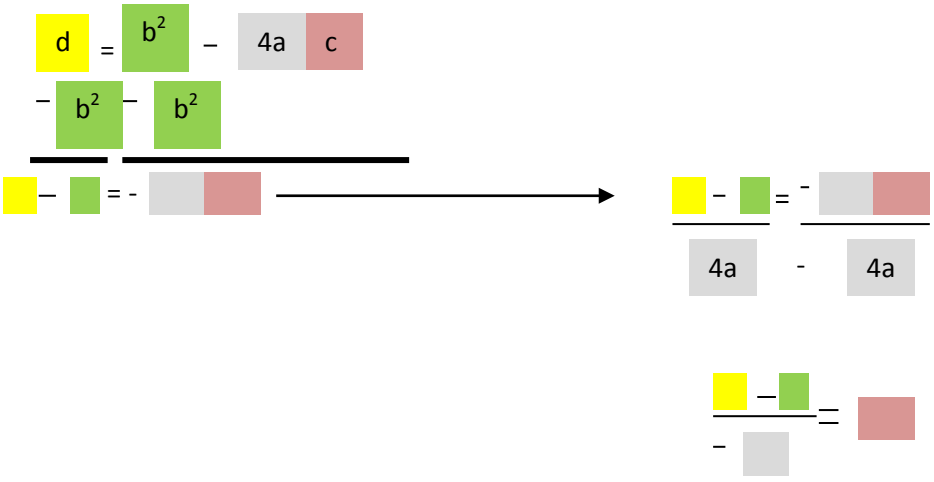
$\square$

$A = p + prt$ for p

$\frac{A}{1 + rt} = \frac{p(1 + rt)}{1 + rt}$

$\square$

Assignment 1.3
Solving Equations



Closed last step Strategy

Assignment 1.3
Solving Equations

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$$\frac{56.52}{\pi(8)} = r^2$$

$$\sqrt{\frac{56.52}{\pi\,(8)}} = \sqrt{r^2}$$

$$\sqrt{\frac{\square}{\pi\,(8)}} = r$$

Closed last step Strategy

Assignment 1.3
Solving Equations

Solve each equation. Check your solution.

$x - 6 = -20$ $\quad -20+6=$ ___

$+6 \quad +6$

___ $=$ ___

$-\frac{2}{3}a = 14$

$-\frac{3}{2} \times -\frac{2}{3}a = 14 \times -3/2$

$14 \times -3/2 =$ ◯

$a =$ ◯

$7 + 5n = -58$ $\quad -58 - 7 =$ ___

$-7 \quad -7$

___ $=$ ___ $\quad$ ___ ÷ ___ = □

5 $\quad$ 5

$n =$ □

$3w + 14 = 7w + 2$ $\quad$ ___ ___ = ___

$-3w \quad -3w$

$14 =$ ___ $+2$

$-2 \quad -2$ $\quad$ ___ ___ = ◯

◯ $=$ ___ $\quad$ ◯ ÷ 4 = △

4 $\quad$ 4

△ $= w$

Assignment 1.3
Solving Equations

$\frac{n}{4}+\frac{n}{3}=\frac{1}{2}$

$12(n/4 + n/3) = ½ (12)$

__ ÷ __ = ☐ 12 ÷ 2 = ☐

__ ÷ __ = ☐

☐ + ☐ = ☐

↓

_____ = ☐

7

n = ☐

5y + 4 = 2(y-4) ___ x ___ = ___ ___ x ___ = ___

5y + 4 = ___ + ___

- ___ - ___

☐ +4 = ___

-4 ☐

___ + ☐ = △

☐ = △

_____ _____

3 ○

△ ÷ ○ = ☐

Y = ☐

Closed Strategy

Assignment 1.3
Solving Equations

MONEY

If Tabitha has 98 cents and you know she has 2 quarters, 1 dime, and 3 pennies, how many nickels does she have?

.98 = (__ x .25) + (__ x .10) + (__ x .01) + (n x .05)

.98 = _____ + _____ + _____ + .05n

_____ + _____ + _____ =

= + .05n

— — =

— —

_____

= .05n

_____ _____

.05

÷ =

n =

She has nickels.

Closed Strategy

Assignment 1.3
Solving Equations

Solve each equation or formula for the specified variables.

$Ax + By = C$ for x

$-By \quad -By$

$Ax =$

$x =$

$\frac{a - 4b^2}{2c} = d$ for a

$\frac{a - 4b^2}{2c} \times 2c = d \times 2c$

$a - 4b^2 = 2cd$

$+4b^2 \quad +4b^2$

$a = 2cd + 4b^2$

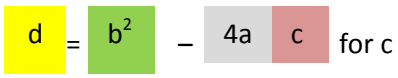
$A = p + prt$ for p

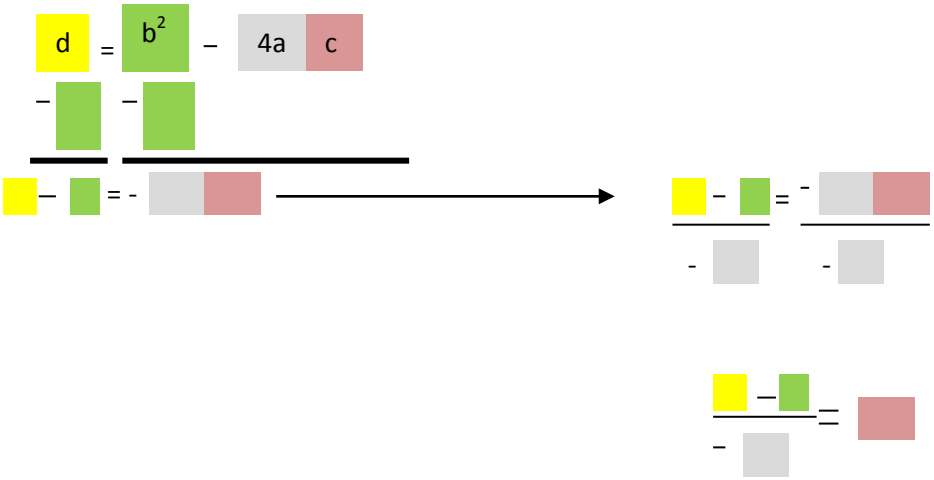
$A = p(1 + rt)$

$\frac{A}{1 + rt} = \frac{p(1 + rt)}{1 + rt}$

$\frac{A}{1 + rt} = p$

Assignment 1.3
Solving Equations





Closed Strategy

Assignment 1.3
Solving Equations

GEOMETRY

Alex wants to find the radius of the circular base of a cone. He knows the height of the cone is 8 inches and the volume of the cone is 18.84 cubic inches. Use the formula for volume of a cone, $V = 1/3\pi r^2 h$, to find the radius.

$V = 1/3\pi r^2 h$

__ x _____ = $1/3\pi r^2$(___) x ___ __ x _____ = ☐

$\frac{\square}{\pi(\_\_\_)} = \frac{\pi r^2(\_\_\_)}{\pi(\_\_\_)}$

$\frac{\square}{\pi(\_\_\_)} = r^2$

$\sqrt{\frac{\square}{\pi\ (8)}} = \sqrt{r^2}$

$\sqrt{\frac{\square}{\pi\ (8)}} = r$

Assignment 1.3
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Solve each equation. Check your solution.

$x - 6 = -20$

$\frac{2}{3}a = 14$

$7 + 5n = -58$

$3w + 14 = 7w + 2$

$\frac{n}{4} + \frac{n}{3} = \frac{1}{2}$

$5y + 4 = 2(y-4)$

MONEY
If Tabitha has 98 cents and you know she has 2 quarters, 1 dime, and 3 pennies, how many nickels does she have?

Solve each equation or formula for the specified variables.

$Ax + By = C$ for x

Open Ended

Assignment 1.3
Solving Equations

$\frac{a - 4b^2}{2c} = d$ for a

$A = p + prt$ for p

$d = b^2 - 4ac$ for c

GEOMETRY

Alex wants to find the radius of the circular base of a cone. He knows the height of the cone is 8 inches and the volume of the cone is 18.84 cubic inches. Use the formula for volume of a cone, $V = 1/3\pi r^2 h$, to find the radius.

Open Ended

Assignment 1.3
Solving Equations

Solve each equation. Check your solution. Begin with Highlighted.

$x - 6 = -20$

$-\frac{2}{3}a = 14$

$7 + 5n = -58$

$3w + 14 = 7w + 2$

$\frac{n}{4}+\frac{n}{3} = \frac{1}{2}$ (Multiply both sides by 12)

$5y + 4 = 2(y-4)$
$5y + 4 = 2y - 8$

MONEY
If Tabitha has 98 cents and you know she has 2 quarters, 1 dime, and 3 pennies, how many nickels does she have?

Assignment 1.3
Solving Equations

Solve each equation or formula for the specified variables.

$Ax + By = C$ for x

$\frac{a - 4b^2}{2c} = d$ for a

$A = p + prt$, for p

$= p$

$d = b^2 - 4ac$, for c

$= c$

GEOMETRY

Alex wants to find the radius of the circular base of a cone. He knows the height of the cone is 8 inches and the volume of the cone is 18.84 cubic inches. Use the formula for volume of a cone, $V = 1/3\pi r^2 h$, to find the radius.