

### 1.3 In-class Practice

1. Solve the equation by factoring or by square root property.

a)  $(x - 2)^2 = -3$

b)  $x^2 - 18x = 19$

c)  $4x^2 - x = 0$

2. Solve the equation by completing the square.

a)  $2x^2 + 8x + 1 = 0$

b)  $3x^2 - 6x - 1 = 0$

c)  $x^2 = \frac{3}{4}x - \frac{1}{8}$

3. Solve the equation using quadratic formula.

a)  $2y^2 - y - \frac{1}{2} = 0$

b)  $3 + 5z + z^2 = 0$

c)  $\sqrt{6}x^2 + 2x - \sqrt{\frac{3}{2}} = 0$

4. Solve for the indicated variable.

a)  $A = 2x^2 + 4xh$ , for  $x$

b)  $\frac{1}{r} + \frac{2}{1-r} = \frac{4}{r^2}$ , for  $r$

5. Using the discriminant, determine the number and type of solutions of the given equation without actually solving it.

a)  $x^2 - 6x + 1 = 0$

b)  $x^2 = 6x - 9$

c)  $4x^2 + 5x + \frac{13}{8} = 0$

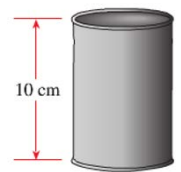
d)  $x^2 + rx - s = 0$   
(assume  $s > 0$ )

6. Find all values of  $k$  that will make the equation having exactly one solution.

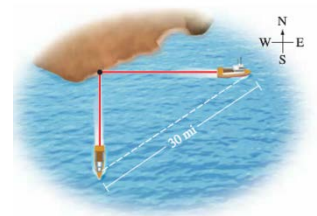
a)  $4x^2 + kx + 25 = 0$

b)  $kx^2 + 36x + k = 0$

7. A cylindrical can has a volume of  $40\pi \text{ cm}^3$  is 10 cm tall. What is its diameter?



8. Two fishing boats depart a harbor at the same time, one traveling east, the other south. The eastbound boat travels at a speed 3 mi/h faster than the southbound boat. After two hours the boats are 30 mi apart. Find the speed of the southbound boat.



9. Jack, Key, and Lynn deliver advertising flyers in a small town. If each person works alone, it takes Jack 4 h to deliver all the flyers, and it takes Lynn 1 h longer than it takes Kay. Working together, they can deliver all the flyers in 40% of the time it takes Kay working alone. How long does it take Kay to deliver all the flyers alone?