

## Review Problems

- Consider the right triangle with sides 16 m, 34 m, and 30 m.
  - Compute the perimeter of the triangle. **Include units in your computation and answer.**
  - Compute the area of the triangle. **Include units in your computation and answer.**
- Simplify each of the following.
 

a) $(x + 2)(2x - 1) - 3(2x - 1)^2$	d) $(a + b)(a - b)$	g) $(3\sqrt{7} - 2)(\sqrt{7} + 1)$
b) $(a + b)^2$	e) $(a + b)^3$	h) $(3\sqrt{2} - 5)^2$
c) $(a - b)^2$	f) $(x + y)^2 - (x - y)^2$	i) $(2\sqrt{6} - 5)(2\sqrt{6} + 5)$
- Simplify each of the following.
 

a) $(-2ab^2)(-a)^5$	b) $\frac{2a^3b(-2b)^2}{-ab^3(-ab)^3}$
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- Simplify  $-x^2 + 3x - 2$  if  $x = -2\sqrt{10} + 3$ .
- Graph each of the following.
 

a) $y = \frac{1}{3}x - 2$	b) $y = -x + 3$	c) $y = 2$
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- Factor out the greatest common factor from each of the following.
 

a) $2x^4y^2 - 4xy^3 + 2xy^2$	b) $12a^2 - 18ab + 36a$	c) $3x^4 - 3x^3 + 24x^2 = 3x^2(x^2 - x + 8)$
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- Factor out  $-1$  from each of the following.
 

a) $x^3 - 5x^2 + 8x - 2$	b) $-x^2 + 7x + 1$
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- Solve each of the following equations.
 

a) $(2x - 1)^2 - 3(x - 2)^2 = (x + 5)^2$	f) $\frac{3x - 1}{4} - \frac{2x - 5}{3} = \frac{x - 17}{12}$
b) $\frac{2}{5}(2w - 1) - \frac{1}{2}(w + 1) = -1 + \frac{1}{3}(w - 1)$	g) $2(m - 1)^2 - 3m(m - 5) = 2(3m + 1)$
c) $\frac{x - 3}{5} - \frac{2x - 1}{3} = -\frac{x + 1}{2}$	h) $3(x - 5)(2x + 1) = 0$
d) $5x^3 = 10x^2$	i) $x(x - 5)(2x + 1) = 0$
e) $(2x - 1)(x - 3) - (x - 2)^2 = 7x - 1$	

## Review Problems - Answers

1. a)  $P = 16\text{ m} + 30\text{ m} + 34\text{ m} = 80\text{ m}$       b)  $A = \frac{1}{2}(16\text{ m})(30\text{ m}) = 240\text{ m}^2$

2. a)  $-10x^2 + 15x - 5$     b)  $a^2 + 2ab + b^2$     c)  $a^2 - 2ab + b^2$     d)  $a^2 - b^2$     e)  $a^3 + 3a^2b + 3ab^2 + b^3$   
 f)  $4xy$     g)  $19 + \sqrt{7}$     h)  $43 - 30\sqrt{2}$     i)  $-1$

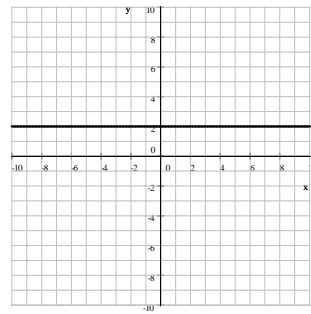
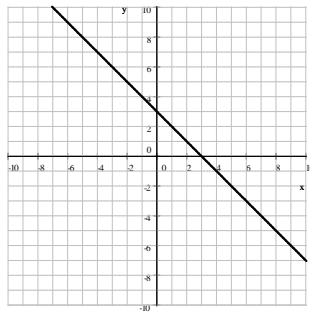
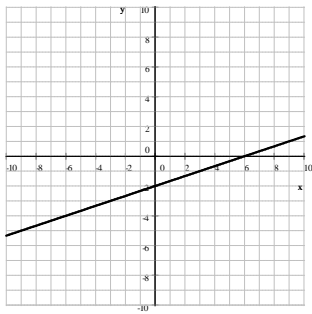
3. a)  $2a^6b^2$       b)  $\frac{8}{ab^3}$

4.  $6\sqrt{10} - 42$

5. a)  $y = \frac{1}{3}x - 2$

b)  $y = -x + 3$

c)  $y = 2$



6. a)  $2xy^2(x^3 - 2y + 1)$     b)  $6a(2a - 3b + 6)$     c)  $3x^2(x^2 - x + 8)$

7. a)  $-(-x^3 + 5x^2 - 8x + 2)$     b)  $-(x^2 - 7x - 1)$

8. a)  $-18$     b)  $13$     c)  $-7$     d)  $0, 2$     e)  $0, 10$     f) no solution    g)  $0, 5$     h)  $5, -\frac{1}{2}$     i)  $0, 5, -\frac{1}{2}$