

Review Problems

- Consider the right triangle with sides 37 m, 12 m, and 35 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.
 - $2(x-3)^2 - (2x-1)^2$
 - $(\sqrt{2}-1)^3$
 - $\frac{(-2ab^3)^2(-a^6b)}{(-2a^3b^2)^3}$
 - $(2\sqrt{5}-3)^2$
 - $(\sqrt{8}+3)(\sqrt{8}-3)$
 - $\frac{-2a^5b(-2ab^5)^3}{-ab^4(-a^2b)^3}$
- Simplify $-x^2 + 4x - 2$ if
 - $x = 2\sqrt{7} - 3$
 - $x = -\sqrt{5} + 1$
 - $x = 2 - \sqrt{2}$
- Graph each of the following.
 - $y = \frac{2}{3}x + 3$
 - $3x + 4y = 12$
 - $x = -3$
- Completely factor each of the following.
 - $-3x^2 + 27$
 - $(4a^2 - 25b^6)$
 - $5a^5 - 80a$
 - $24x + 6x^3$
 - $x^2 - 1$
- Simplify each of the following.
 - $\frac{2x^3 - 18x}{5x + 15}$
 - $\frac{x - 5}{5 - x}$
 - $\frac{3x - 6}{3x^2 - 12}$
- Solve each of the following equations.
 - $(x-3)^2 - (x-5)^2 = (x+4)(x-4)$
 - $5a^4 = 20a^3$
 - $\frac{2}{3}(m-1) + \frac{2}{7}(2m+1) = \frac{m}{2} + 7$
 - $5a^4 = 20a^2$
 - $\frac{x-1}{3} - \frac{2-x}{5} = x+3$
 - $2x^5 = 2x$
 - $(x+5)^2 - (x-5)^2 = x(x-10)$

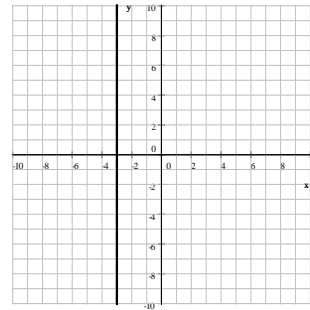
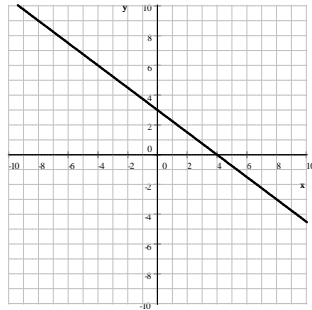
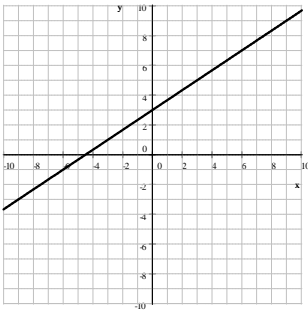
Answers

1. a) $P = 37 \text{ m} + 12 \text{ m} + 35 \text{ m} = 84 \text{ m}$ b) $A = \frac{1}{2} (12 \text{ m}) (35 \text{ m}) = 210 \text{ m}^2$

2. a) $-2x^2 - 8x + 17$ b) $29 - 12\sqrt{5}$ c) $5\sqrt{2} - 7$ d) -1 e) $\frac{b}{2a}$ f) $16ab^9$

3. a) $20\sqrt{7} - 51$ b) $-2\sqrt{5} - 4$ c) 0

4. a) $y = \frac{2}{3}x + 3$ b) $3x + 4y = 12$ c) $x = -3$



5. a) $-3(x - 3)(x + 3)$ b) $(2a - 5b^3)(2a + 5b^3)$ c) $5a(a^2 + 4)(a + 2)(a - 2)$
 d) $6x(x^2 + 4)$ e) $(x + 1)(x - 1)$

6. a) $\frac{2x(x - 3)}{5}$ b) -1 c) $\frac{1}{x + 2}$

7. a) $0, 4$ b) 10 c) -8 d) $0, 30$ e) $0, 4$ f) $-2, 0, 2$ g) $-1, 0, 1$