

1. Compute the area of a right triangle with sides 15 cm, 8 cm, and 17 cm long. Include units in your computation and answer.
2. a) Graph the equation  $y = -\frac{2}{3}x + 5$       b) Graph the equation  $3x - 5y = 15$
3. Simplify each of the following expressions.
  - a)  $\frac{2x^3(-2x)^3}{-8x^2}$
  - b)  $\frac{3ab^3(2a^3b)}{12a^5b}$
  - c)  $x^3(-x)^6$
4. Simplify each of the following expressions.
  - a)  $3(2x - 5) - 4x - 3$
  - e)  $(3\sqrt{5} - 2)^2$
  - i)  $(3q - 2)^2 - 2(q - 1)^2$
  - b)  $3(2x - 5) - 4(x - 3)$
  - f)  $\sqrt{48} - 2\sqrt{27} + 5\sqrt{12}$
  - j)  $2x - 5 - (x - 1)^2$
  - c)  $(5m^3 - 2)(5m^3 + 2)$
  - g)  $(2\sqrt{3} - 7)(3\sqrt{3} + 1)$
  - d)  $(3x - 2y)^2$
  - h)  $(3\sqrt{6} - 5)(3\sqrt{6} + 5)$
5. Factor out the GCF (greatest common factor) of each of the following.
  - a)  $12m^3 - 42m^2$
  - b)  $5x^3 - 20x^2$
  - c)  $28x^3 - 20x^2 + 4x^5$
  - d)  $6ab + 12a^4b - 30ab^2c$
6. Solve each of the following equations. Make sure to check your solution(s).
  - a)  $2(x - 5) - 3(x + 2) = 5(x + 3) - 7$
  - d)  $5x^3 = 20x^2$
  - b)  $(3x - 1)^2 - (x - 2)^2 = 2(2x - 1)^2 + 1$
  - e)  $2x(2x + 7)(x - 3) = 0$
  - c)  $\frac{x + 1}{6} - \frac{2x - 1}{5} = x - 28$