

**PDEV 100**  
**Exam 2**  
**Review Sheet**

This review sheet is intended to remind you of the concepts that you are expected to understand for the exam. It is by no means a complete representation of what could be on the exam. You are responsible for everything discussed in the notes, on labs and in the suggested homework exercises. You should work these on a separate piece of paper.

1. Solve the following equations for  $x$ .

(a)  $3(x - 4) = 2x + 18$

(f)  $\frac{2}{3}(x - \frac{1}{2}) + \frac{1}{6} = \frac{1}{3}x + 1$

(b)  $\frac{1}{3}x - \frac{1}{4}x = 2x - 1$

(g)  $x^3 + 3x^2 - 4x - 12 = 0$

(c)  $2x^2 - 3x - 10 = 0$

(h)  $3(2 - x) = -3x + 7$

(d)  $x^2 = \frac{1}{4}$

(e)  $x^2(x + 2) - 7x(x + 2) + 6(x + 2) = 0$

(i)  $2(x + 4) - 6 = 3x - (x + 5) + 7$

2. Assume that  $xz^2 - y = zx$ .

(a) Find  $x$  if  $y = 2$  and  $z = -1$ .

(c) Find  $z$  if  $x = 1$  and  $y = 6$

(b) Find  $y$  if  $x = -3$  and  $z = \frac{1}{2}$

3. Solve the following formulas for the required variable.

(a)  $xy - 2z = 3y$  for  $x$

(c)  $rt - pt = 14$  for  $t$

(b)  $ab - c = 2cd - ad$  for  $a$

4. A benefit concert for charity was held in the ballroom of a hotel. There were two ways to contribute the charity. Tables in the front of the ballroom could be bought for \$2000 each. Individual tickets could be bought for \$150 each. A total of 270 tables and individual tickets were bought. The amount raised for charity was \$66,400. How many people bought tables?

5. Two supplementary angles satisfy that one angle is 6 degrees less than 5 times the other angle. Find the measure of each angle.

6. A farmer has 800 meters of fence. He fences off a rectangular region in which the length is 3 times the width. Find the dimensions of the rectangle.

7. In an isosceles triangle one angle is 60 degrees more than  $\frac{2}{5}$  each base angle. Find the measures of each angle in the triangle.



15. Find the slope of the line passing through the given points and the slope of a line perpendicular to the line passing through the given points. Then find an equation of the line passing through the given points.

(a)  $(-5, 10)$  and  $(-8, 12)$

(c)  $(5, 6)$  and  $(-7, 6)$

(b)  $(-3, -8)$  and  $(2, -1)$

(d)  $(14, -10)$  and  $(2, 5)$

16. Find an equation of the line that passes through  $(8, 7)$  and is perpendicular to  $4x + 5y = 2$ .

17. Find an equation of the line that is perpendicular to  $y = 3$  and passes through the point  $(2, 1)$ .

18. Find an equation of the line that is parallel to  $5x - 7y = 10$  and passes through the point  $(4, -2)$ .

19. Find an equation of the line that passes through  $(10, 3)$  and is parallel to  $6x + 5y = -2$ .

20. Graph the following equations by plotting points.

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

(b)  $y = |x + 1|$

21. Solve the following inequalities. Graph your solutions.

(a)  $y \geq 2x - 1$

(c)  $y \leq (x - 2)^2$

(e)  $3x - 2y \geq 6$

(b)  $y - 3 < \frac{1}{2}x + 3$

(d)  $y > |x + 1|$