

## Math 200 Practice Test Full Solutions

<p>1.</p> $ 9  +  -12  -  -16 $ $= 9 + 12 - 16$ $= 5$	<p>2.</p> <p>Answer: <math>x = -14, x = 14</math></p>	<p>3.</p> $15 - 23k + 7(4k - 9)$ $= 15 - 23k + 28k - 63$ $= 5k - 48$
<p>4.</p> $b^2 - 4ac$ $(-8)^2 - 4(-1)(5)$ $= 64 - 4(-1)(5)$ $= 64 + 20$ $= 84$	<p>5.</p> $-9x = 24$ $\frac{-9x}{-9} = \frac{24}{-9}$ $x = -\frac{8}{3}$ $\left\{ -\frac{8}{3} \right\}$	<p>6.</p> $x - 3 = -9$ $x - 3 + 3 = -9 + 3$ $x = -6$ $\{-6\}$
<p>7.</p> $5x - 8 = 27$ $5x - 8 + 8 = 27 + 8$ $5x = 35$ $\frac{5x}{5} = \frac{35}{5}$ $x = 7$ $\{7\}$	<p>8.</p> $51 - 2x = -21$ $51 - 51 - 2x = -21 - 51$ $-2x = -72$ $\frac{-2x}{-2} = \frac{-72}{-2}$ $x = 36$ $\{36\}$	<p>9.</p> $2m + 23 = 17 - 8m$ $\underline{+8m} = \underline{+8m}$ $10m + 23 = 17$ $\underline{-23} = \underline{-23}$ $10m = -6$ $\frac{10m}{10} = \frac{-6}{10}$ $m = -\frac{3}{5}$ $\left\{ -\frac{3}{5} \right\}$

<p>10.</p> $3(2x - 7) - 2(x - 9) = 2x - 33$ $6x - 21 - 2x + 18 = 2x - 33$ $4x - 3 = 2x - 33$ $\underline{-2x = -2x}$ $2x - 3 = -33$ $2x - 3 + 3 = -33 + 3$ $2x = -30$ $\frac{2x}{2} = \frac{-30}{2}$ $x = -15$ $\{-15\}$	<p>11.</p> $\frac{1}{3}x + \frac{3}{4} = \frac{5}{24}x + \frac{3}{2}$ $24 \cdot \frac{1}{3}x + 24 \cdot \frac{3}{4} = 24 \cdot \frac{5}{24}x + 24 \cdot \frac{3}{2}$ $8x + 18 = 5x + 36$ $\underline{-5x = -5x}$ $3x + 18 = 36$ $3x + 18 - 18 = 36 - 18$ $3x = 18$ $\frac{3x}{3} = \frac{18}{3}$ $x = 6$ $\{6\}$	<p>12.</p> $x - 3 > -8$ $x - 3 + 3 > -8 + 3$ $x > -5$ <p>Open circle at <math>-5</math>, shade to right <math>(-5, \infty)</math></p>
<p>13.</p> $9 - 4x \geq -7$ $9 - 9 - 4x \geq -7 - 9$ $-4x \geq -16$ $\frac{-4x}{-4} \leq \frac{-16}{-4}$ $x \leq 4$ <p>Closed circle at 4, shade to left <math>(-\infty, 4]</math></p>	<p>14.</p> $-21 \leq 3x - 6 \leq 24$ $-21 + 6 \leq 3x - 6 + 6 \leq 24 + 6$ $-15 \leq 3x \leq 30$ $\frac{-15}{3} \leq \frac{3x}{3} \leq \frac{30}{3}$ $-5 \leq x \leq 10$ <p>Closed at <math>-5</math>, Closed at <math>10</math>, shade between <math>[-5, 10]</math></p>	

15. One number is 26 more than another. If the sum of the two numbers is 98, find the two numbers.

Unknowns:  $x$  and  $x + 26$

$$x + x + 26 = 98$$

$$2x + 26 = 98$$

$$2x = 72$$

$$x = 36$$

$$x + 26 = 62$$

The numbers are 36 and 62.

16. Celia has \$5 and \$10 bills in her purse, worth a total of \$135. She has 6 more \$5 bills than \$10 bills. How many \$5 bills does Celia have?

Unknowns: \$5's:  $x + 6$ , \$10's:  $x$

$$5(x + 6) + 10x = 135$$

$$5x + 30 + 10x = 135$$

$$15x + 30 = 135$$

$$15x = 105$$

$$x = 7$$

$$x + 6 = 13$$

13 \$5 bills and 7 \$10 bills.

17. The sum of three consecutive integers is 279. Find the three integers.

Unknowns:  $x$ ,  $x + 1$ ,  $x + 2$

$$3x + 3 = 279$$

$$3x = 276$$

$$x = 92$$

$$x + 1 = 93$$

$$x + 2 = 94$$

The integers are 92, 93, and 94.

18. The width of a rectangle is 7 feet longer than its length, and the perimeter is 50 feet. Find the length and the width of the rectangle.

Unknowns: Length:  $x$ , Width:  $x + 7$

$$2(x) + 2(x + 7) = 50$$

$$2x + 2x + 14 = 50$$

$$4x + 14 = 50$$

$$4x = 36$$

$$x = 9$$

$$x + 7 = 16$$

The length is 9 feet and the width is 16 feet.