Skills Test #1 Practice Problems

1. Evaluate each expression if **a = 4**, **b = -5**, and **c = -2**.

   $7a - 3b + 2c =$ $-2a + 5b - 6c =$

2. Evaluate each expression.

   $4^3 =$ $5^2 =$ $8^1 =$ $2^6 =$

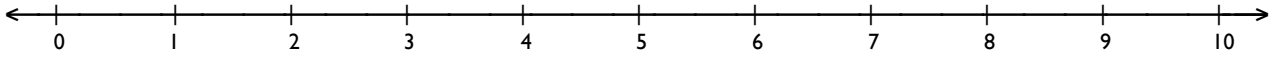
3. Evaluate each expression.

   $\sqrt{16} =$ $\sqrt{49} =$ $\sqrt{121} =$ $\sqrt{144} =$

4. Evaluate each expression.

   "two cubed plus five squared" = "seven squared minus three cubed" =

5. Plot each square root on the number line. $\sqrt{14}$ $\sqrt{27}$ $\sqrt{5}$ $\sqrt{83}$



6. Simplify each square root completely.

   $\sqrt{28} =$ $\sqrt{125} =$ $\sqrt{90} =$

   $\sqrt{88} =$ $\sqrt{700} =$ $\sqrt{360} =$

7. Evaluate each expression.

   $2 \cdot 8 - 3 + 12 \div 2 + 3^2 =$ $60 \div 2 \cdot 10 - (5 + 6)^2 =$

Skills Test #2 Practice Problems

1. Evaluate each expression. Remember that the square root sign counts as a **grouping symbol**.

$\sqrt{20+30\div 6}+18\div\left(5-2\right)^2+1=$ $\left(8-6\right)^3+\sqrt{4+8\bullet 4}\bullet 2-7=$

2. Evaluate each expression. Remember that the absolute value bars count as a **grouping symbol**.

$3+8\left|4-9\right|=$ $6-2\left|3-8\right|=$

$\left|7-9\right|-4\left|2-6\right|=$ $5\left|8-3\right|+2\left|6-10\right|=$

3. Write the additive inverse of each number.

-3 8 -9 0 -1 7

$\frac{1}{5}$ $-\frac{2}{3}$ $\frac{6}{5}$ $-\frac{1}{9}$ $\frac{7}{8}$ $-\frac{12}{5}$

4. Simplify each expression by combining like terms.

$3x-5x^2+8x-2$ $-8-5x^2-9+6x^2+3x$

$7-2x+4x^2+1-x+3x^2-9$ $6x^2-1+9x-2x^2-12x+8-3-x^2$

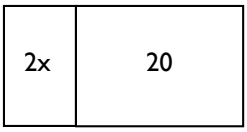
Skills Test #3 Practice Problems

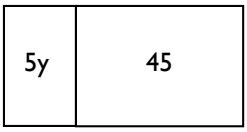
1. Simplify each expression by combining like terms.

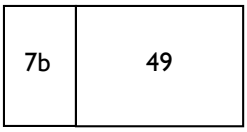
$2x - 9x^2 + 5 - 4x + 10 - 1$ $\quad$ $-5x^2 + 8 - 3x + 4 - 3x + 5x^2 - 1$

$7 + 6y - 3x^2 + 2 - 6y - 4y^2 + 5x^2 + 9y^2$ $\quad$ $x^2 + 8x + 2y^2 - 3x^2 - 5x + 5 - 3x + 4y^2 + 2x^2$

2. Write the multiplication problem that each area model represents.







3. Multiply by using the distributive property.

$6(2 + 5x) =$ $\quad$ $-6(4x - 3) =$ $\quad$ $-2(8 - 7x) =$

$3x(4 - 2x) =$ $\quad$ $-4x(2x - 9) =$ $\quad$ $-5x(1 - 6x) =$

4. Simplify the expression completely. Remember to distribute first, and then combine like terms.

$7 - 2(3 - 4x) =$ $\quad$ $3 + 6(-2 + 9x) =$

$8x - 3x(4 + x) =$ $\quad$ $4x + 2x(7x - 5) =$

$4[5x - 2(3x + 3)] - 4 =$ $\quad$ $-4[2 + 5(3x - 7)] + 2x - 5 =$

Skills Test #4 Practice Problems

1. Write the multiplicative inverse of each number.

-3	8	-9	0	-1	7
$\frac{1}{5}$	$-\frac{2}{3}$	$\frac{6}{5}$	$-\frac{1}{9}$	$\frac{7}{8}$	$-\frac{12}{5}$

2. Check each solution by substituting the value for x.

$\frac{3}{7}x - 8 = -2$ $\boxed{x = 14}$ $\frac{2}{5}x + 7 = -1$ $\boxed{x = -15}$

$4x - 1 = -6 - 3x$ $\boxed{x = -5}$ $2x + 20 = 5 - 3x$ $\boxed{x = -3}$

3. Solve for x. (One Step Equations)

$x + 12 = -2$ $x - 9 = -14$ $x - 16 = 20$ $\frac{x}{4} = 12$

$\frac{x}{7} = 21$ $\frac{x}{-2} = 50$ $\frac{5}{4}x = -15$ $\frac{2}{7}x = 18$

4. Solve for x. (Two Step Equations)

$3x - 8 = -14$ $5x - 20 = 15$ $\frac{3}{4}x + 6 = 18$ $-\frac{5}{2}x - 9 = -24$

$8x - 15 = -13$ $12x + 11 = 3$ $5 - 12x = 29$ $7 - 3x = -8$

5. Solve for x. (Variable on both sides)

$8x + 5 = 7 - 2x$ $5x + 10 = 3 + 4x$ $7x + 3 = -5 - 5x$

Skills Test #5 Practice Problems

1. Solve for x. **Important reminder:** simplify each side of the equation first!

$2\left(5x-2\left[3x+2\right]\right)+30=6$

$-2\left(8-3\left[2x+9\right]\right)+50=4$

$3\left(5x-2\right)+17=5-3\left(2-6x\right)$

$4+4\left(3x-2\right)=2\left(x-5\right)+9x$

2. The lengths of the sides of a triangle are 2x + 5, 3x – 1, and 7x + 2 cm. If the perimeter is 126 cm, find the value of x.

3. The length and width of a rectangle are 4x – 2 and 3x + 5. If the perimeter is 118 inches, find the value of x.