Readiness Check Formula Sheet

Perimeter of a rectangle

$P = 2l + 2w$

Area of a rectangle

$A = lw$

Area of a triangle

$A = \frac{1}{2}bh$

Volume of a rectangular pyramid

$V = \frac{1}{3}lwh$

Distance formula

$\text{distance} = \text{rate} \cdot \text{time}$

$d = rt$

Skills Assessment

The Skills Assessment is *not* a test. This part of the Readiness Check includes 24 math problems designed to identify skills you may need to review or practice before starting algebra.

- **Do** use the Formula Sheet.
- **Do** show your work.
- **Do** check your work.
- **Do not** use a calculator.
- **Do** your best, even if you are unsure how to solve a problem. It is important to attempt and to persevere through each problem.

Evaluate. Write answers in simplest terms.

1) $3\frac{1}{2} \div 4\frac{1}{3}$

2) $\frac{7}{8} - \frac{5}{12}$

3) $|6-10| + 2^3 - (4+2)^2 \div 6 + \sqrt{81}$

4) Evaluate: -7^2

Is the answer positive or negative? Explain your reasoning.

5) Evaluate: $(-3)^4$

Is the answer positive or negative? Explain your reasoning.

6) At Floyd's Family Farm the ratio of chickens to goats was seven to eight. If the farm owned 14 goats, how many chickens do they own? Show your work.

7) Given $3x - 4 = 17$ and $\frac{1}{2}y + 2 = 5$, find the **sum** of x and y. Show your work.

8) Solve. Show all your work. Check your solution.

$$-\frac{5}{2}(x - 2) = 15$$

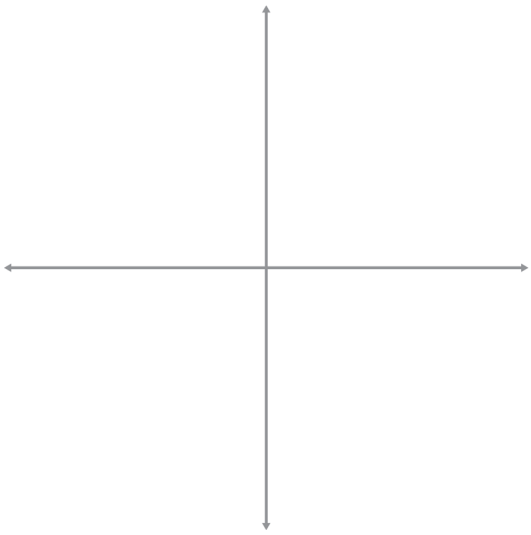
Check

9) Find the error, describe it, and then solve the equation correctly.

$$\frac{3}{4}x - 5 = 2$$
$$+5 \quad +5$$
$$\frac{3}{4}x = 7$$
$$-\frac{3}{4} \quad -\frac{3}{4}$$
$$x = 6\frac{1}{4}$$

10) Write an equation and solve.
Three times a number (n) is equal to four times the same number minus two.

11) Label the quadrants on the coordinate plane.
Then, label the x- and y-axis.



List *all* the factors of each number. Circle any factors that are a perfect square.

12) 49

13) 48

14) Evalute $-2x^2y^3$ when $x = -3$ and $y = 2$.

15) Given $3x - 5 = 10$, what is $2 - 5x$?

16) Using the values 1, 4, and 7 *only once*, find the combination that yields the **smallest possible** solution. Explain your thinking.

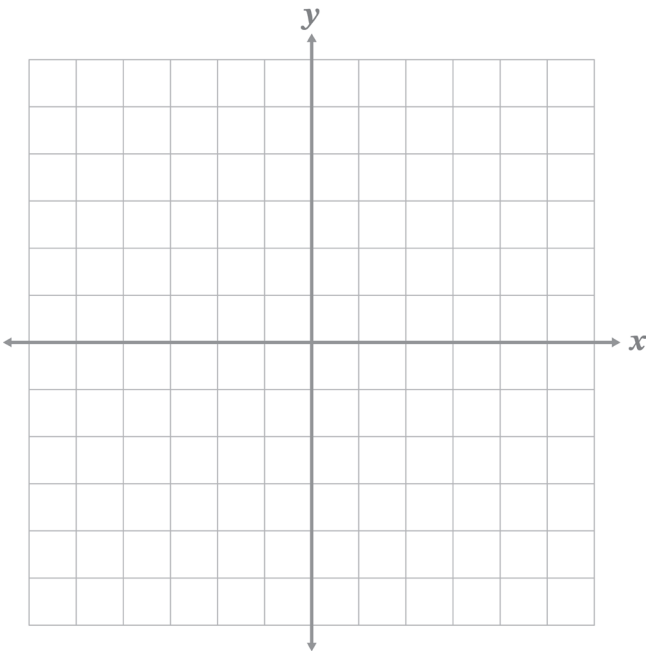
$$5 = \frac{\square}{\square}\,x - \square$$

17) Name the GCF and LCM of 12 and 15.

18) The length (l) of a rectangle is twice the width (w). Find the *area* when the perimeter of the rectangle is 54 units.

19) Plot and label the points to create a triangle.
Use your graph to determine the base and height and find the area of the triangle. Remember to include the proper units.

A: $(-3, -1)$
B: $(4, 5)$
C: $(4, -1)$



20) Solve. Show all your work. Checking your solution is *required*.

$3x + 4 - 5x = 1$

Check

21) Solve the inequality. Graph the solution(s) on the number line.

$x + 4 < 5$

22) If the volume of the pyramid is 32 and the length is 4 and the width is 2, find the height. Write the formula and solve. Use your formula sheet and show your work.

23) Complete the table of values for the equation: $y = 3x - 4$

x	work for $y = 3x - 4$	y
–1		
0		
1		
2		

24) Describe the pattern for the x- and y-values from the table.