Hello student! Use this practice test to prepare for your math placement test: WAMAP Test 2. Answers are included at the end of document, if you get $75 \%+$ correct we encourage you to take Test 2 with Highline College. If this content is too difficult, try WAMAP Test 1. *You can choose to start with Test 1 or Test 2.

1. Find the slope, x -intercept, and y -intercept for the line $-9 x+5 y-6=0$.

The slope is $\qquad$ .
The $x$-intercept is $\qquad$ .
The $y$-intercept is $\qquad$ .
Note: Your answers must be decimals.
2. Given the points $(-4,-6)$ and $(9,-9)$ find the slope.
$m=$ $\qquad$
3. Write an equation for the line that passes through the points $(-2,7)$ and $(4,-5)$. Give your answer in slope-intercept form ( $y=m x+b$ ).

The slope-intercept equation of the line is:
$y=$ $\qquad$
4. Sketch a graph of the linear equation: $-x-4 y=4$

5. Consider the equation, $-8 x+3 y=-24$ graphed below:


Enter your answers as integers or reduced fractions in the form A/B.
$y$-Intercept: ( $\qquad$ , $\qquad$ )

Slope $=$ $\qquad$
6. Consider the following equation: $y=-\frac{3}{8} x-3$

Enter your answers as integers or reduced fractions in the form A/B.
$x$-Intercept: $\qquad$
$\qquad$ )
7. Graph the line of the equation $2 x+8 y=8$.

8. Solve this system of equations

$$
\left\{\begin{array}{rlr}
3 x+y & = & -5 \\
2 x-2 y & = & 2
\end{array}\right.
$$

$x=$ $\qquad$
$y=$ $\qquad$
9. Graph three non-vertical lines so the system of equations has one solution

10. Solve the given linear system of equations:

$$
\left\{\begin{array}{r}
8 x-2 y=4 \\
-12 x+3 y=12
\end{array}\right.
$$

Enter your answer in the form of an ordered pair $(x, y)$.

If the system contains no solutions, enter DNE.
If the system contains infinite soultions, enter oo.
11. Solve the system by graphing. Type your solution as an ordered pair into the box at the bottom.

$$
\begin{aligned}
& y=\frac{7}{8} x+1 \\
& y=\frac{9}{8} x-1
\end{aligned}
$$



The solution of the system is $\qquad$
12. Solve the following linear system of equations:
$\left\{\begin{array}{r}4 x-8 y=4 \\ -6 x+12 y=12\end{array}\right.$
Select the correct choice below and, if necessary, fill in an answer box to complete your answer.
A. _-System is consistent (one solution): $(x, y)=($ $\qquad$ )
B. _ System is inconsistent (no solution)
C. __System is dependent (infinite solutions)
13. Suppose that the world's current oil reserves is $R=1980$ billion barrels. If, on average, the total reserves is decreasing by 23 billion barrels of oil each year, answer the following:
A.) Give a linear equation for the total remaining oil reserves, $R$, in terms of $t$, the number of years since now. (Be sure to use the correct variable and Preview before you submit.) $R=$ $\qquad$
B.) 5 years from now, the total oil reserves will be $\qquad$ billions of barrels.
C.) If no other oil is deposited into the reserves, the world's oil reserves will be completely depleted (all used up) approximately $\qquad$ years from now.
(Round your answer to two decimal places.)
14. Let $y$ be the value (in thousands of dollars) of a car when it is $x$ years old. Some pair of values of $x$ and $y$ are listed in the table.

| Age (years) | Value (thousands of dollars) |
| :---: | :---: |
|  | $y$ |
| 0 | 37 |
| 1 | 32 |
| 2 | 27 |
| 3 | 22 |
| 4 | 17 |

Find an equation that describes the relationship between $x$ and $y$.
15. The Nut Shack sells hazelnuts for $\$ 7.00$ per pound and peanuts nuts for $\$ 5.50$ per pound. How much of each type should be used to make a 43 pound mixture that sells for $\$ 6.30$ per pound?

Round answers to the nearest pound.
$\qquad$ pounds of hazelnuts
pounds of peanuts nuts
16. The admission fee at an amusement park is $\$ 1.50$ for children and $\$ 4$ for adults. On a certain day, 293 people entered the park, and the admission fees collected totaled 702.00 dollars. How many children and how many adults were admitted?

Your answer is number of children equals $\qquad$ number of adults equals $\qquad$
17.

Linear Equations - Application
Last year, Pinwheel Industries introduced a new toy. It cost \$ 1,400 to develop the toy and $\$ 25$ to manufacture each toy. Use this information to answer the following:
Give a linear equation in the form $C(n)=m n+b$ that gives the total cost, in dollars, to produce $n$ of these toys.

$$
C(n)=
$$

$\qquad$
The cost to produce 1,050 toys is $\$$ $\qquad$ .
If the total cost is $\$ 58,900$, then $\qquad$ toys were produced.
18. Solve by the quadratic formula. List the solutions, separated by commas.

$$
4 x^{2}=-16 x+20
$$

$x=$ $\qquad$
19.

## Solving Quadratic Equations

Solve the quadratic equation $16 x^{2}+4=-16 x$ by using the Quadratic Formula. Write your answers in Exact Form and in Approximate Form (Rounded to three decimal places as needed). Note that in some cases, the Exact Form and the Approximate Form may be the same.

$$
\text { Let } x_{1}=\frac{-b-\sqrt{b^{2}-4 a c}}{2 a} \text { and } x_{2}=\frac{-b+\sqrt{b^{2}-4 a c}}{2 a}
$$

Note: If only one solution exists, $x_{2}$ will equal DNE

$$
16 x^{2}+4=-16 x
$$

$\qquad$
$\qquad$
Approximate Form
Approximate Form
$x_{2}=$ $\qquad$
20. Solve by the quadratic formula. List the solutions, separated by commas.

$$
-20 x^{2}+14 x-2=0
$$

$x=$ $\qquad$
21. Find the intercepts of the given quadratic function. Be sure to simplify your answers.

$$
f(x)=x^{2}+8 x+14
$$

Enter the exact values of the intercepts. Hint: You may need to used the quadratic formula.
The smaller x-intercept is the point ( $\qquad$ ,0).
The larger $x$-intercept is the point ( $\qquad$ $0)$. The $y$-intercept is the point ( 0 , $\qquad$ ).
22. Solve the equation $(x+2)^{2}=0$

Select the correct choice below and, if necessary, fill in an answer box to complete your answer.
A. _There are no real solutions
B. _-The equation has one real solution. It is $x=$
C. __The equation has two real solutions. One of the solutions is $x=$ $\qquad$
23. Simplify. $(2 x+6)^{2}$
24. Simplify the expression completely:
$\left(\frac{x^{3}}{y^{7}}\right)^{4}=$ $\qquad$
25. Simplify: $\frac{5 c^{4}}{15 c^{2}}$
A. $-20 c^{2}$
B. $-75 c^{6}$
C. $-\frac{c^{2}}{3}$
D. $-\frac{10}{c^{2}}$
26. Multiply and simplify:
$\left(3 x^{5} y^{2}\right)\left(5 x^{2}-7 x^{4} y^{3}\right)=$ $\qquad$
Click in the answer box for additional formatting options.
27. Suppose that you are holding your toy submarine under the water. You release it and it begins to ascend. The graph models the depth of the submarine as a function of time.

What is the domain and range of the function in the graph?


D: $\qquad$ $\leq t \leq$ $\qquad$
R: $\qquad$ $\leq d \leq$ $\qquad$
28. Height of trees in feet, with respect to time: $H(t)$

Time $t$ in years since planted.

Use the graph of the function $H(t)$ to answer the following questions:
a) What is the value of $H(1)$ ?
b) List one value of $t$ such that $H(t)=5$.
$H(\ldots$ _ $)=5$
29. Select the graph that represents a linear function.
A.

B.

C.

D.

30. Given that $f(x)=3 x-7, g(x)=\left|5 x^{2}+3 x\right|$, and $h(x)=5 x^{2}-3 x+7$, evaluate $g(-4)$
$g(-4)=$ $\qquad$
31. Solve the inequality. Then graph the solution and give interval notation.

$$
-27 \leq-8 x-3<29
$$



Interval notation for the above graph and inequality is $\qquad$
32. Solve the inequality. Give the answer in interval notation.

$$
-3+2 x>-5
$$

Interval notation for the answer is $\qquad$
33. Solve the inequality and write your answer in interval notation. Use "U" between the two intervals. Use "oo" (two lower case o's) for $\infty$.

$$
17 x+9 \leq-12+6 x
$$

34. Solve the compound inequality and give your answer in interval notation.
$7 x+2>37$ OR $-1 x+3 \geq 8$
35. A swimming pool is being filled at a constant rate measured in gallons per minute.

The water increases by 5 gallons every 5 minutes. There was originally 120 gallons in the pool when filling started.
Determine the water level $W$ as a function of time in minutes, $t$.
$W=W(t)=$ $\qquad$
36. Graph the interval $(-\infty,-4]$ on a number line.

Choose the correct graph below:

A. -

B. -

C.

D. $\qquad$
37. Partners are building a clothing business on Amazon and looking for manufacturers to sew their clothing. They found two options they like.
Company A has a one-time introductory fee of \$ 1720 that charges $\$ 3$ per item to manufacture.
Company B is an in-home program which charges \$ 691 to enroll and then $\$ 13$ per item to manufacture.

Though Company B is cheaper at first, how many items must be manufactured before the total cost of Company A matches the total cost of the Company B manufacturer?

The total cost of both the Companies will be the same after approximately
$\qquad$ items are manufactured. (Type a whole number. Round decimal answers to the nearest week.)
The total amount paid for that many clothing items will be \$ $\qquad$ (Type a whole number. Round decimal answers to the nearest dollar.)

## Key - Form 1

1. $\quad 1.8 \sim-0.66666666666667 \sim 1.2$
2. -0.23076923076923
3. $-2 x+3$
4. 


5. $0 \sim-8 \sim \frac{8}{3}$
6. $0 \sim-8$
7.

8. $-1 \sim-2$
9. Answers may vary
10. $D N E$
11.

$\sim(8,8)$
12. System is inconsistent (no solution) $\sim \sim$
13. $-23 t+1980 \sim 1865 \sim 86.086956521739$
14. $y=-5 x+37$
15. $23 \sim 20$
16. $188 \sim 105$
17. $25 n+1400 \sim 27650 \sim 2300$
18. $1,-5$
19. $-\frac{1}{2} \sim D N E \sim-0.5 \sim \mathrm{DNE}$
20. $\frac{1}{2}, \frac{1}{5}$
21. $-4-\sqrt{2} \sim-4+\sqrt{2} \sim 14$
22. The equation has one real solution. It is $\mathrm{x}=[\mathrm{AB} 1] \sim-2 \sim$
23. $4 x^{2}+24 x+36$
24. $\frac{x^{12}}{y^{28}}$
25. $\frac{c^{2}}{3}$
26. $15 x^{7} y^{2}-21 x^{9} y^{5}$
27. $0 \sim 6 \sim-5 \sim 0$
28. $3 \sim 2$
29.

30. 68

31.
$\sim(-4,3]$
32. $(-1, \infty)$
33. $\left(-\infty,-\frac{21}{11}\right]$
34. $(-$ oo, -5$] \mathrm{U}(5,0$ o $)$
35. $t+120$
36.

37. $103 \sim 2029$

These practice packets should NOT be taken more than once. Instead, use them to target specific areas that need further work and access more practice questions online with $\qquad$ WAMAP

