DOUGLAS

MATU ALGEBRA PLACEMENT

PRACTICE ASSESSMENT

This practice assessment is designed to help you review algebra skills that you may have forgotten if you have not been using them recently. Avoid trying to "cram" material which is new to you, that is why you take an upgrading course.

INSTRUCTIONS:

1. Do the calculations by hand---the actual assessment does <u>not</u> permit calculator use.

2. Do the questions <u>without</u> referring to text books or the answer key as a way of refreshing your memory---this way you will get an accurate measure of what you recall (at the moment of writing).

3. Use the answer key to score your test---each question is right or wrong (no part marks). Where alternate forms of the same correct answer exist, the answer key will so indicate.

4. Use any introductory algebra text book to review topics or procedures you know you have <u>never seen before</u>---don't worry about them, and <u>don't try to self-teach</u>! Wait for the appropriate course to introduce the topic(s).

Scores:

Part 1	/13
Part 2	/14
Total	**/27**

Put your final answer in the <u>space</u> provided.

PART 1   Simplify the following (unless otherwise directed)
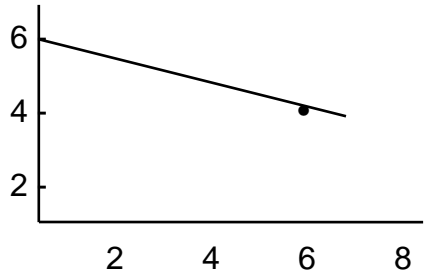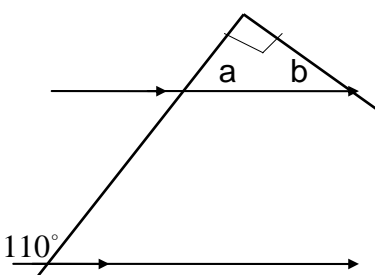
1. $\quad 5 + 3\left[4 - 2(8 - 5)\right]$	1.
2. $\quad \dfrac{1}{3^{-2}}$ (simplify **fully**)	2.
3. $\quad$ If $a = -2$ and $b = -3$, then $-2ab^3 = ?$	3.
4. $\quad \left(-2a^2b^3\right)\left(-12a^7b^4\right)$	4.
5. $\quad \dfrac{18n^7t^3}{63n^{14}t}$	5.
6. $\quad \sqrt{38}\sqrt{57}$ (simplify the answer, but **<u>not</u>** as a decimal)	6.

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7.	$5(3a - 2) - 4(3a - 1)$	7.
8.	$(2a - b)(3a - 7)$	8.
9.	$\dfrac{(14x^5 y^2)(21x^2 y^3)}{7x^2 y}$	9.
10.	$\dfrac{14x^5 y^2 - 21x^2 y^3}{7x^2 y}$	10.
11.	$(13n^5)^2$	11.
12.	Solve for x if $x - 6 = 14 - 3x$	12.
13.	Factor: $y^2 - y - 30$	13.

END OF PART 1
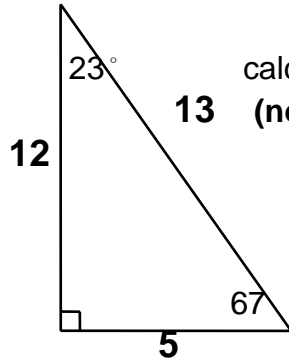
PART 2

14.	$\sqrt{147} - \sqrt{75}$ **DO NOT** convert to decimals	14.
15.	Factor: $10x^2 + 21x - 10$	15.
16.	Simplify by making lowest terms: $\dfrac{12ab - 3b}{3ab}$	16.
17.	$\dfrac{2a-1}{7} - \dfrac{3a+2}{7}$	17.
18.	$\dfrac{n-3}{n} + \dfrac{n+5}{2}$	18.
19.	Solve for x if $\dfrac{x-3}{5} = \dfrac{x+5}{3}$	19.
20.	Simplify by making lowest terms: $\dfrac{x^2 + 6x - 7 = ?}{x^2 + x - 2}$	20.

21. Solve for x if $x^2 - 5x - 24 = 0$	21.
22. Solve for h if $v = \dfrac{1}{3}\pi r^2 h$	22.
23. Solve for x <u>and</u> y if $\quad x + 2y = -4$ $\qquad\qquad\qquad\qquad\quad 3x - y = 9$	23.
24. Given $2y - 6x = 15$ as the equation of a line. What is the "slope" and what is the "y-intercept" of the line?	24. slope = y-int =
25. Calculate the slope of this line	25.
26. Given: $\angle a = ?$ $\angle b = ?$	26

27. Given: and Tangent = opposite / adjacent	27.
23° calculate Tan $23°$ as a <u>fraction</u> **13** **(not from the calculator)** **12** 67 **5**	

ANSWER KEY

PART 1	PART 2
1. -1	14. $2\sqrt{3}$
2. 9	15. $(5x-2)(2x+5)$ or $(2x+5)(5x-2)$
3. -108	16. $\dfrac{4a-1}{a}$
4. $24a^9b^7$	
5. $\dfrac{2t^2}{7n^7}$	17. $\dfrac{-a-3}{7}$ or $\dfrac{-a+3}{7}$ or $\dfrac{-(a+3)}{7}$
6. $19\sqrt{6}$	18. $\dfrac{n^2+7n-6}{2n}$
7. $3a-6$	
8. $6a^2-14a-3ab+7b$ (any order)	19. -17
9. $42x^5y^4$	20. $\dfrac{x+7}{x+2}$
10. $2x^3y-3y^2$	21. 8 and -3 ..**BOTH** are required for a correct answer.
11. $169n^{10}$	
12. 5	22. $h=\dfrac{3v}{\pi\tau^2}$ or $\dfrac{v}{\frac{1}{3}\pi\tau^2}$
13. $(y-6)(y+5)$ or $(y+5)(y-6)$	
	23. $x=2$ and $y=-3$
	BOTH are required for a correct answer
	24. slope = 3
	y-int = $\dfrac{15}{2}$ or 7.5
	BOTH are required for a correct answer
	25. $-\dfrac{1}{3}$
	26. $a=70°$ and $b=20°$ **BOTH** are required for a correct answer
	27. $\dfrac{5}{12}$ (0.4244 is **not** acceptable)