midterm EXAMS

EXAM EXAM

GOAL

you got THIS!!

YOU GOT THIS

$\frac{28.5}{47} = 61\%$, F

MAKE MISTAKES

STUDY! 18.5

I'M JUST A BABY

GROWTH

1. $y = 3x - 7$ ✓

2. $5.95b + 4.25$ ✓

3. PEMDAS

$7^2 + 20 \div 4 + 2 \cdot 6$

$49 + 20 \div 4 + 2 \cdot 6$

$49 + 5 + 12$

66 ✓

4.

$4x + 16 > 40$

$-16 \quad -16$

$\frac{4x}{4} > \frac{24}{4}$

$x > 6$ ✓

5. $3x - 6y = 24$ ✓

a.) Standard Form

b.)

b.) ✓

c.) $y = -4$

d.) $x = 8$ ✓

24 $3x - 6y = 24$

$-3x \quad -3x$

$\frac{-6y}{-6} = \frac{-3x + 24}{-6}$, $y = \frac{1}{2}x - 4$

6. $f(x) = -x^2 + 14x$, $f(-2)$

Square first!

$-1(-2)^2 + 14(-2)$

$-2^2 + -28$

$-4 + -28$

-24, -32

7. $\frac{x}{100} = \frac{11,500}{10,000}$

$\frac{10,000x}{10,000} = \frac{1150000}{10,000}$

$x = 115$, 115% ✓

8. $4(7x - 9) = 76$

$28x - 36 = 76$

$+36 \quad +36$

$\frac{28x}{28} = \frac{112}{28}$

$x = 4$ ✓

9. $\frac{7x + 2y^2}{3x - 5y}$, $x = -2$ & $y = 3$

$\frac{7(-2) + 2(3)^2}{3(-2) + 5(3)}$ → $2 \cdot 3^2$

$\frac{7 + 2^2}{3 + 5}$ $\frac{-14 + 18}{-6 - 15} = -\frac{4}{21}$

$$\frac{7+1}{3+5}$$

$$\frac{11}{8}$$

10. Find the range $y = -2x^2 + 5$, domain $= \{-2, 0, 1, 3\}$

exponent first!

-2	$-2(-2)^2 + 5$	$21, -3$
0	$-2(0)^2 + 5$	5
1	$-2(1)^2 + 5$	$9, 3$
3	$-2(3)^2 + 5$	$41, -13$

$\{5, 9, 21, 41\}$

$\{-13, -3, 3, 5\}$

11. $f + 11$ ✓

12. B.) $(1,2), (-2,5), (3,5), (4,5), (1,5)$ ✓

13. D.) $\frac{-4}{7} = \frac{-20}{49}$ ✓

14. ~~$\frac{4}{x} = \frac{x}{3.75}$~~

$x = 15$, 15 in. ✓

15.

$x \leq 0$ or $x \geq 2$ ✓

16.

$-7x - 11 = 38$
$+11 \quad +11$

$\frac{-7x}{-7} = \frac{49}{-7}$

$x = -7$ ✓☺

17.

$3(x+8) = 5x - 6$

$3x + 24 = 5x - 6$
$-5x \qquad -5x$

$-2x + 24 = -6$
$-24 \quad -24$

$\frac{-2x}{-2} = \frac{-30}{-2}$

$x = 15$ ✓☺

18.

$6x + 4 < 4x - 20$
$-4x \qquad -4x$

$2x + 4 < -20$
$-4 \quad -4$

$\frac{2x}{2} < \frac{-24}{2}$

$x < -12$ ✓☺

~~19.~~

$|3x + 5| - 4 = 17$
$+4 \quad +4$

$3x + 5 - 4 = 17$

$3x + 1 = 17$
$-1 \quad -1$

$\frac{3x}{3} = \frac{16}{3}$

$x = 5.3$

$|3x + 5| = 21$

$3x + 5 = 21$
$-5 \quad -5$

$\frac{3x}{3} = \frac{16}{3}$

$x = \frac{16}{3}$

$3x + 5 = -21$
$-5 \quad -5$

$\frac{3x}{3} = \frac{-26}{3}$

$x = -\frac{26}{3}$

20. C.) (2, 0) ✓☺

21. $Ax + By = C$

$-Ax \qquad\qquad -Ax$

$\frac{By}{B} = \frac{C - Ax}{B}$

$y = \frac{C - Ax}{B}$ ✓

22. $\frac{4}{2.8} = \frac{x}{60}$, round to 10th

$\frac{2.8x}{2.8} = \frac{240}{2.8}$

$x = 85.7$ ✓

23. $\frac{220}{4} = \frac{x}{4}$

$\frac{4x}{4} = \frac{1,980}{4}$

$x = 495$ miles ✓

24. $-3x + 22 > 28$

$-22 \quad -22$

$\frac{-3x}{-3} > \frac{6}{-3}$

$x < -2$ ✓

good job!

25. $-3(5 - 2x) = 45$

$-15 + 6x = 45$

$+15 \qquad +15$

$\frac{6x}{6} = \frac{60}{6}$

$x = 10$ ✓

26. $x \geq 12.99$ ✓

27. $\frac{40}{70} = \frac{x}{120}$

$\frac{70x}{70} = \frac{4800}{70}$

$x = 69$, 69 people ✓

28. $|2x+8| - y < 3$

$2x+8-y<3$

$-8 \quad -8$

$2x - y < -5$

D.) $x = -7,\ y = 5$ ✓

29. $y = -x^2 + 4x - 9,\ x = 3$

$y = -1(3)^2 + 4(3) - 9$

$y = -9 + 12 - 9$

$y = 12$ $y = -6$

30. $y = mx + b,\ (3, -2),\ b = -2$

$-2 = 3x - 2$

$y + 2 = -2x + 6$

$-2 \quad\quad -2$

$y = -2x + 4$

31. $\frac{3y}{3} = \frac{4x+12}{3},\ -8x + 6y = 24$

$y = \frac{4x+12}{3}$

$y = \frac{4}{3}x + 12$

$-8x + 6y = 24$
$+8x \qquad +8x$

$\frac{6y}{6} = \frac{8x + 24}{6}$

$y = \frac{8}{6}x + 4$

Parallel, Same line

32. $-2, 6, -18, 54 \ldots -162, 486, -1{,}458$ (×3, ×3, ×3)

Can't, geometric.

33. $\frac{6x}{6} = \frac{-240}{6}$

$x = -40$ ✓

34. $5 = -7x - 4$ $\quad y - 5 = -7(x + 4)$ + slope

$y - 5 = -7x - 28$
$+9 \qquad +5$
$y = -7x - 23$ slope-int

35. $8 + 3c = 1m$
$C = -3m - 8$

$7x + y = -23$ St. Form

36. $62 + 8(-3) = 62 - 24 = 34$ 38

37. 4.3 ✓

38. $4x + 5y = 9$
$-4x - 5y \quad -5y$
$\quad -4x$

$\frac{4x}{4} = \frac{-5y + 9}{4}$

$x = -\frac{5}{4}x + \frac{9}{4}$, $-\frac{5}{4}$

$\frac{5y}{5} = \frac{-4x + 9}{5}$

$y = -\frac{4}{5}x + \frac{9}{5}$

$m = -\frac{4}{5}$

39. ~~$\frac{x}{100} = \frac{0.25}{1}$~~

$x = 25$, 25% ✓☺

40. $y = -\frac{1}{2}x + 5$, $-\frac{1}{2}$ ✓☺

41.

a.) Yes

b.) No

c.) No

d.) Yes

42.

a.) Associative

b.) Commutative

c.) Distributive

~~d.)~~ Zero, identity

~~e.)~~ Zero, inverse

~~43.~~

$4 = 2 + b$

$y = 0x + b$

$y = b$

~~44.~~

$5x = 2y - 3z$, z = slope

$+3z \quad +3z$

$3z + 5x = 2y$

$-5x \quad -5x$

$\frac{3z}{3} = \frac{-5x + 2y}{3}$

$z = \frac{-5x + 2y}{3}$

45. $\frac{680,000 - 420,000}{420,000}$

62% ✓☺

16. $|x+6|<6$

$x+6<6$

$-6 \quad -6$

$x<0$

$|x+6|<6$

$x+6<6 \qquad x+6>-6$

$-6 \quad -6 \qquad -6 \quad -6$

$x<0 \qquad x>-12$

$-12<x<0$

17. $y-y_1=m(x-x_1)$

$y-7=\frac{3}{4}(x-4)$ ✓☺

$y-7=\frac{3}{4}(x-4)$

$y-7=\frac{3}{4}x-3$

$+7 \qquad +7$

$y=\frac{3}{4}x+4$