EXAM 1G* PRE ALGEBRA Dr. Rapalje

SHOW ALL WORK on this test or on separate paper. Circle final answers. NO CALCULATORS!!

PART 1: (2 points each)
In 1 - 15, give the value.

1. $7 + 3 \cdot 5$
2. $20 \div 4 \cdot 5$
3. $5 \cdot 2^2$
4. $8 + 2 \cdot 3^2 - 5$
5. $(-12) + (-8)$
6. $(-15) + 5$
7. $(-3) \cdot (-8)$
8. $(-36) \div 6$
9. $16 \cdot (-3)$
10. $12 \div 0$
11. $0 \div 12$
12. $(-3)^2$
13. -3^2
14. $(-3)^3$
15. $(-3)(-2)(-5)$
16. $(-1)^8$
17. $3^2 + 4^2$
18. $(-2)^2 + (-2)^3$

In 19 – 23, simplify and combine like terms:

19. $(-8x) + (-15x)$
20. $(-8x) + (-15x) + 20x$
21. $x^2 - 8x - 14y - 5x^2 + 13x + 5y$
22. $5(5x - 4y) + 4(2y - x)$
23. $4(7x + 4) - 3(6x - 4)$

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In 24 - 28, given $x = -2$ and $y = 5$, evaluate the following expressions.

24. $3xy$

25. $5x + 3y - 8$

26. $10x + 3xy - 5y$

27. $x^2 + 3xy + y^2$

28. $y^2 - x^2$

In 29 - 32, give an expression in terms of the unknown number x .

29. 4 more than three times an unknown number

30. 3 less than twice a number

31. A box contains 40 quarters and dimes. If there are x quarters, how many dimes are there?

32. If you have x dollars in your wallet, and you spend $20, how much do you have left?

PART 2: (4 points each, partial credit)

In 33 – 42, solve the equations for x.

33. $3x = -36$

34. $-x = -27$

35. $-12x = 48$

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36. $5x + 16 = 36$

37. $9x - 12 = 78$

38. $3x - 12x = 27$

39. $-5x + 16 = 58 + 2x$

40. $12x - 20 = -3x + 25$

41. $6(x - 4) = 10 + 2(7 - x)$

42. $6 - 3(2x + 6) = 2(3x + 1) - 2$

BONUS POINTS:

1. **Give first and last name of study partner(s) or members of your study group.**

2. **Attach joke and/or slips from Academic Success Center(s).**

3. **Approximately how many hours per week do you spend outside of class on math homework?**

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MAT 0012C EXAM 1G* Solutions

1. $7+3\cdot5$
$7+15$
22

2. $20\div4.5$
5.5
25

3. 5.2^2
5.4
20

4. $8+2.3^2-5$
$8+2.9-5$
$8+18-5$
21

5. $(-12)+(-8)=-20$

6. $(-15)+5=-10$

7. $(-3)\cdot(-8)=24$

8. $(-36)\div6=-6$

9. $16\cdot(-3)=-48$

10. $12\div0=$ undefined

11. $0\div12=0$

12. $(-3)^2=(-3)(-3)=9$

13. $-3^2=-3\cdot3=-9$

14. $(-3)^3=(-3)(-3)(-3)$
$=-27$

15. $(-3)(-2)(-5)$
$=6(-5)=-30$

16. $(-1)^8=1$

17. 3^2+4^2
$=9+16$
$=25$

18. $(-2)^2+(-2)^3$
$=4+(-8)$
$=-4$

19. $(-8x)+(-15x)$
$=-23x$

20. $(-8x)+(-15x)+20x$
$=-23x+20x$
$=-3x$

21. $x^2-8x-14y-5x^2+13x+5y$
$=x^2-5x^2-8x+13x-14y+5y$
$=-4x^2+5x-9y$

22. $5(5x-4y)+4(2y-x)$
$=25x-20y+8y-4x$
$=21x-12y$

23. $4(7x+4)-3(6x-4)$
$=28x+16-18x+12$
$=10x+28$

For 24–28, $x=-2$ and $y=5$

24. $3xy$
$=3(-2)(5)$
$=-6\cdot5$
$=-30$

25. $5x+3y-8$
$=5(-2)+3(5)-8$
$=-10+15-8$
$=5-8=-3$

26. $10x+3xy-5y$
$=10(-2)+3(-2)(5)-5(5)$
$=-20-30-25$
$=-75$

27. $x^2+3xy+y^2$
$=(-2)^2+3(-2)(5)+5^2$
$=4-30+25$
$=-1$

28. y^2-x^2
$=5^2-(-2)^2$
$=25-4$
$=21$

29. $3x+4$

30. $2x-3$

31. $40-x$

32. $x-20$

33. $\frac{3x}{3}=\frac{-36}{3}$
$x=-12$

34. $\frac{-1x}{-1}=\frac{-27}{-1}$
$x=27$

35. $\frac{-12x}{-12}=\frac{48}{-12}$
$x=-4$

36. $5x+16=36$
$-16\ \ -16$
$\frac{5x}{5}=\frac{20}{5}$
$x=4$

37. $9x-12=78$
$+12\ \ +12$
$\frac{9x}{9}=\frac{90}{9}$
$x=10$

38. $3x-12x=27$
$\frac{-9x}{-9}=\frac{27}{-9}$
$x=-3$

39. $-5x+16=58+2x$
$-2x\qquad -2x$
$-7x+16=58$
$-16\ \ -16$
$\frac{-7x}{-7}=\frac{42}{-7}$
$x=-6$

40. $12x-20=-3x+25$
$+3x\qquad +3x$
$15x-20=25$
$+20\ \ +20$
$\frac{15x}{15}=\frac{45}{15}$
$x=3$

41. $6(x-4)=10+2(7-x)$
$6x-24=10+14-2x$
$6x-24=24-2x$
$+2x\qquad +2x$
$8x-24=24$
$8x=48$
$x=6$

42. $6-3(2x+6)=2(3x+1)-2$
$6-6x-18=6x+2-2$
$-6x-12=6x$
$+6x\qquad +6x$
$\frac{-12}{12}=\frac{12x}{12}$
$x=-1$