MATH 95 – EXAM 1
Spring 2008 Name Key

Write the answer for each question in the space provided. Show all work. Each question is worth 4 points. Good luck!

1. Evaluate: $\frac{5x+y}{3}$ when $x = 3$ and $y = 6$. $\frac{15+6}{3}$ 1. 7

2. Use the commutative law of addition to write an expression equivalent to $3a + 5$. 2. $5 + 3a$

3. Multiply: $-4(a-9)$ 3. $-4a + 36$

4. Factor out a common number: $14x + 28 + 35y$ 4. $7(2x + 4 + 5y)$

5. Find the absolute value $|-7.9|$. 5. 7.9

6. Find the reciprocal of -5. 6. $-1/5$

Compute and simplify. Show your work, not just the answer from a calculator. Use order of operations as needed.

7. $20 \div 5 \cdot 2 - 6$ $= 4 \cdot 2 - 6 = 8 - 6$ 7. 2

8. $\frac{-1}{8} + \frac{5}{12}$ $\frac{-1(3)}{8(3)} + \frac{(5)(2)}{12(2)} = \frac{-3}{24} + \frac{10}{24}$ 8. $7/24$

9. $-\frac{4}{7} \div \left(-\frac{9}{7}\right)$ $\frac{-4}{7} \cdot \frac{-7}{9} = +\frac{28}{63} = \frac{4}{9}$ 9. $\frac{4}{9}$

10. $5^2 - 6[4 - (-6-3)2]$ 10. -107

$25 - 6[4 - (-9)2] = 25 - 6[4 - (-18)]$
$= 25 - 6[22] = 25 - 132 = -107$

Simplify:

11. $12x - (7x - 14)$ 11. $5x + 14$

$12x - 7x + 14$

12. $4(3a - 2b) - 3a + 6b$ 12. $9a - 2b$

$12a - 8b - 3a + 6b$

Solve:

13. $-\frac{5}{4}y = -10$ $-\frac{4}{5} \cdot -\frac{5}{4}y = -\frac{4}{5}\left(\frac{-10}{1}\right)$ $y = \frac{+40}{5}$ $y = 8$ — 13. $y = 8$

14. $3z - 7 = 7z + 9$
$-3z \quad -3z$
$-7 = 4z + 9$
$-9 \quad -9$
$\frac{-16}{4} = \frac{4z}{4}$ $z = -4$ — 14. $z = -4$

15. $-4 - x = 17$
$+4 \quad +4$
$-x = 21$ $x = -21$ — 15. $x = -21$

16. $-7 - 2x = 3(x + 6)$
$-7 - 2x = 3x + 18$
$+2x \quad +2x$
$-7 = 5x + 18$
$-18 \quad -18$
$\frac{-25}{5} = \frac{5x}{5}$ — 16. $x = -5$

Solve. Write answers as inequalities.

17. $8x + 4 < 7x - 9$
$-7x \quad -7x$
$x + 4 < -9$
$-4 \quad -4$
$x < -13$ — 17. $x < -13$

18. $4 - 5x > 44$
$-4 \quad -4$
$\frac{-5x}{-5} > \frac{40}{-5}$ $x < -8$ — 18. $x < -8$

Solve:

19. $A = 2\pi rh$ for h.
$\frac{A}{2\pi r} = \frac{2\pi rh}{2\pi r}$ — 19. $h = \frac{A}{2\pi r}$

20. $A = 6lw + 4w$ for w.
$A = w(6l + 4)$ — 20. $w = \frac{A}{6l + 4}$

21. What number is 37% of 20?

21. 7.4

$x = .37(20)$

22. What percent of 40 is 28?

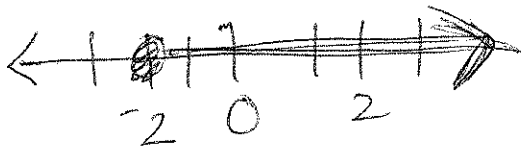
22. 70%

$(x)(40) = 28 \qquad x = \frac{28}{40} = .7$

Graph on a number line:

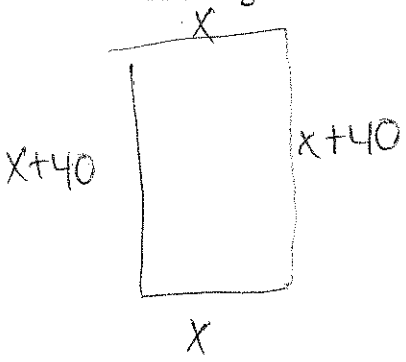
23. $x \geq -2$

Graph



24. Jack bought a Radiohead poster at the concert last week. Its perimeter is 204 cm. The length is 40 cm more than the width. Find the width and height of the ~~television.~~ poster

24. ~~31cm by~~ 71cm



$4x + 80 = 204$

$-80 \quad -80$

$4x = 124$

$x = 31$

25. The second angle of a triangle is 36° less than the first angle. The third angle is twice as large as the first angle. How large is each angle?

25. 54°, 18°, 108°

1st = x = 54°

2nd = $x - 36 = 18°$

3rd = $2x = 108°$

$x + x - 36 + 2x = 180$

$4x - 36 = 180$

$+36 \quad +36$

$\frac{4x}{4} = \frac{216}{4}$

$x = 54$

MATH 95 – EXAM 1
Spring 2008 Name Key

Write the answer for each question in the space provided. Show all work. Each question is worth 4 points. Good luck!

1. Evaluate: $\frac{2x+3y}{4}$ when $x = 8$ and $y = 4$. $\frac{16+12}{4}$ 1. 7

2. Use the commutative law of addition to write an expression equivalent to $3a + 5$. 2. $5 + 3a$

3. Multiply: $-7(a-9)$ 3. $-7a + 63$

4. Factor out a common number: $15x + 20 + 35y$ 4. $5(3x + 4 + 7y)$

5. Find the absolute value $|-6.2|$. 5. 6.2

6. Find the reciprocal of -3. 6. $-\frac{1}{3}$

Compute and simplify. Show your work, not just the answer from a calculator. Use order of operations as needed.

7. $20 \div 5 \cdot 2 - 6 = 4 \cdot 2 - 6 = 8 - 6$ 7. 2

8. $\frac{5}{8} + \left(-\frac{7}{12}\right)$ $\frac{5 \cdot 3}{8 \cdot 3} + \frac{-7 \cdot 2}{12 \cdot 2}$ $\frac{15}{24} - \frac{14}{24}$ 8. $1/24$

9. $-\frac{6}{11} \div \left(-\frac{2}{5}\right)$ $-\frac{6}{11} \cdot \frac{-5}{2} = \frac{+30}{22} = \frac{15}{11}$ 9. $15/11 = 1\frac{4}{11}$

10. $4^2 - 7[11 - (4-9)2]$ 10. -131

$16 - 7[11 - (-5)2] = 16 - 7[11 - (-10)] = 16 - 7[21] = 16 - 147$

Simplify:

11. $8x - (4x - 11)$ 11. $4x + 11$

$8x - 4x + 11 = 4x + 11$

12. $7(3a - 11b) + 4a - 9b$ 12. $25a - 86b$

$21a - 77b + 4a - 9b$

Solve:

13. $-\frac{3}{2}y = -27$

$-\frac{2}{3} \cdot -\frac{3}{2}y = -\frac{2}{3} \cdot \frac{-27}{1}$

$y = +\frac{54}{3}$

13. $y = 18$

14. $4z - 5 = 2z + 7$

$-2z \quad -2z$

$2z - 5 = 7$

$+5 \quad +5$

$\frac{2z}{2} = \frac{12}{2}$

$z = 6$

14. $z = 6$

15. $5 - x = -7$

$-5 \quad -5$

$-x = -12$

$x = 12$

15. $x = 12$

16. $4 - 3x = 5(x - 1)$

$4 - 3x = 5x - 5$

$+3x \quad +3x$

$4 = 8x - 5$

$+5 \quad +5$

$9 = 8x$

16. $x = 9/8 = 1\frac{1}{8}$

Solve. Write answers as inequalities.

17. $10x + 3 < 9x - 6$

$-9x \quad -9x$

$x + 3 < -6$

$-3 \quad -3$

$x < -9$

17. $x < -9$

18. $3 - 8x > 59$

$-3 \quad -3$

$\frac{-8x}{-8} > \frac{56}{-8}$

$x < -7$

18. $x < -7$

Solve:

19. $I = Prt$ for P.

$\frac{I}{rt} = \frac{Prt}{rt}$

19. $P = \frac{I}{rt}$

20. $A = 6lw + 4w$ for w.

$A = w(6L + 4)$

20. $\frac{A}{6L+4} = w$

21. What number is 23% of 30?

$x = .23(30)$

21. 6.9

22. What percent of 50 is 43?

$(x)(50) = 43$

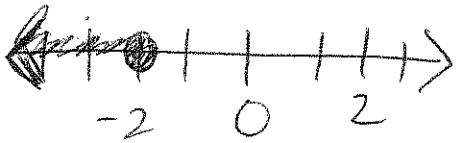
$x = \frac{43}{50} = .86$

22. 86%

Graph on a number line:

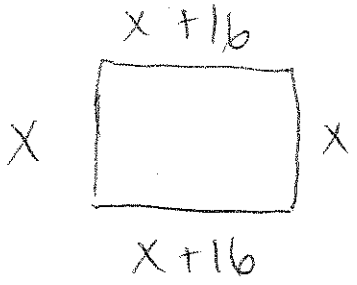
23. $y \leq -2$

Graph



24. Jack bought a new television. Its perimeter is 128 inches. The width is 16 inches more than the height. Find the width and height of the television.

24. 24" by 40"



$4x + 32 = 128$

$-32 \quad -32$

$\frac{4x}{4} = \frac{96}{4}$ $x = 24$

25. The second angle of a triangle is 36° less than the first angle. The third angle is twice as large as the first angle. How large is each angle?

25. 54°, 18°, 108°

1st = $x = 54^\circ$

2nd = $x - 36 = 18^\circ$

3rd = $2x = 108^\circ$

$x + x - 36 + 2x = 180$

$4x - 36 = 180$

$\frac{4x}{4} = \frac{216}{4}$

$x = 54$