

Do the following problems as indicated.

Simplify.

$$1) \left(\frac{2x^5}{3y^{-3}} \right)^{-4}$$

Perform indicated operations. Simplify answers.

$$2) (3x^2y + 2xy) - (6x^2y + 8xy^2 + 4xy)$$

$$3) (5x + 12)(4x - 2)$$

$$4) (8x + 5y)^2$$

$$5) (3y - 4)(9y^2 + 12y + 16)$$

Factor completely.

$$6) 9k^2 - 100m^2$$

$$7) 15z^2 - 14z - 8$$

$$8) 64x^3 + 125y^3$$

$$9) x^3 + 2x^2 - 25x - 50$$

Perform the division.

$$10) \frac{15x^3 - 10x^2 - 19x - 8}{3x - 5}$$

Solve the equation.

$$11) \frac{1}{4}(8x - 12) = \frac{1}{3}(9x - 6) - 6$$

$$12) -2.6q + 1.1 = -2.5 - 1.4q$$

$$13) 6y^2 + 19y + 10 = 0$$

$$14) 39n^2 + 6n = 0$$

Solve using the addition and multiplication principles.

$$15) -9x + 4 \geq -7x + 20$$

Find the slope of the line going through the pair of points.

$$16) (7, -7), (5, 2)$$

Find the slope of the line.

$$17) 4x - 5y = -18$$

Determine whether the graphs of the equations are parallel lines, perpendicular lines, or neither.

$$18) \begin{aligned} 3x - 8y &= 3 \\ 32x + 12y &= 3 \end{aligned}$$

$$19) \begin{aligned} 6x + 2y &= 8 \\ 27x + 9y &= 37 \end{aligned}$$

Graph the linear equation.

$$20) y = \frac{1}{4}x + 2$$

$$21) 3x + 4y = -16$$

$$22) y = 3$$

$$23) y = -6x$$

24) Jennifer's annual salary increased from \$25,000 to \$40,000 over the last five years. Find the percent increase in her salary during this time period. Round to the nearest tenth of a percent.

25) The sum of three consecutive integers is 330. Find the integers.

26) Jim has gotten scores of 93 and 62 on his first two tests. What score must he get on his third test to keep an average of 80 or greater?

Answer Key

Testname: MATH113FINALSREVIEW

1) $\frac{81}{16x^{20}y^{12}}$

2) $-3x^2y - 8xy^2 - 2xy$

3) $20x^2 + 38x - 24$

4) $64x^2 + 80xy + 25y^2$

5) $27y^3 - 64$

6) $(3k + 10m)(3k - 10m)$

7) $(3z - 4)(5z + 2)$

8) $(4x + 5y)(25x^2 - 20xy + 25y^2)$

9) $(x + 5)(x - 5)(x + 2)$

10) $5x^2 + 5x + 2 + \frac{2}{3x - 5}$

11) $x = 5$

12) $q = 3$

13) $y = -\frac{5}{2}, -\frac{2}{3}$

14) $n = -\frac{2}{13}, 0$

15) $\{x \mid x \leq -8\}$

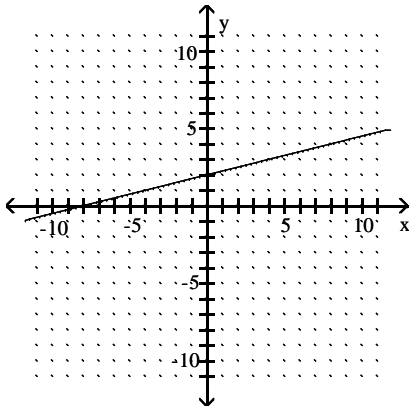
16) $-\frac{9}{2}$

17) $\frac{4}{5}$

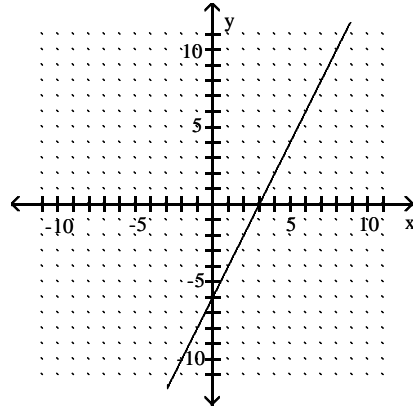
18) Perpendicular

19) Parallel

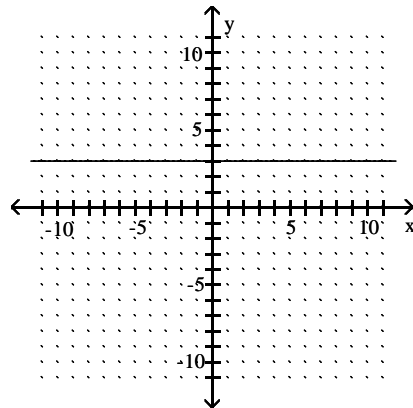
20)



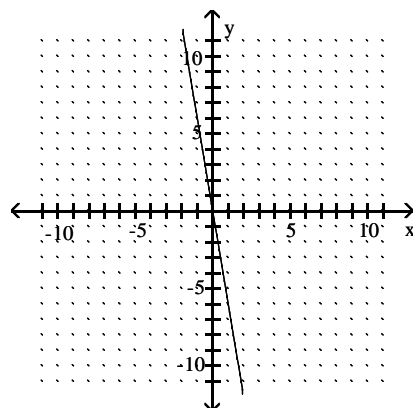
21)



22)



23)



24) 60.0%

25) 109, 110, 111

26) At least 85