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Exams

UNIVERSITY OF MANAGEMENT AND TECHNOLOGY

MATH 105 Exam 1 20 Unanswered Save Submit for Grading

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Q1. Solve the equation by the Square Root Method.

$(2x + 3)^2 = 25$

a. {1, 4}
b. {-14, 14}
c. {-4, 1}
d. {0, 1}

Q2. Find an equation for the line with the given properties. Express the answer using the slope-intercept form of the equation of a line.

Parallel to the line y = -3x; containing the point (2, 3)

a. y - 3 = -3x - 2
b. y = -3x - 9
c. y = -3x + 9
d. y = -3x

Q3. Write the standard form of the equation of the circle with radius r and center (h, k).

r = 12; (h, k) = (5, 0)

a. $x^2 + (y + 5)^2 = 12$
b. $x^2 + (y - 5)^2 = 12$
c. $(x - 5)^2 + y^2 = 144$
d. $(x + 5)^2 + y^2 = 144$

Q4. Find all the points having an x-coordinate of 9 whose distance from the point (3, -2) is 10.

a. (9, 6), (9, -10)
b. (9, 13), (9, -7)
c. (9, -12), (9, 8)
d. (9, 2), (9, -4)

Q5. Find the real solutions of the equation.

$x^4 - 625 = 0$

- a. {-25, 25}
- b. {-5, 5}
- c. {- $\sqrt{5}$, $\sqrt{5}$ }
- d. no real solution

Q6. Find the real solutions of the equation by factoring.

$$\frac{x-7}{x} = \frac{48}{x+7}$$

- a. {7, 1}
- b. {49, -1}
- c. {49, 1}
- d. {7, -1}

Q7. Translate the sentence into a mathematical equation. Be sure to identify the meaning of all symbols.

The volume of a right prism is the area of the base times the height of the prism.

- a. If V represents the volume, B the area of the base, and h the height, then $V = B + h.$
- b. If V represents the volume, B the area of the base, and h the height, then $V = Bh.$
- c. If V represents the volume, B the area of the base, and h the height, then $V = \frac{1}{2}Bh.$
- d. If V represents the volume, B the area of the base, and h the height, then $V = \frac{B}{h}.$

Q8. Find an equation for the line with the given properties. Express the answer using the general form of the equation of a line.

Containing the points (-4, -2) and (0, -9)

- a. 7x - 4y = 36
- b. -7x - 4y = 36
- c. 2x - 9y = -81
- d. -2x + 9y = -81

Q9. Find the real solutions of the equation by factoring.

$5x^3 + 2x^2 = 80x + 32$

- a. {- $\frac{2}{5}$, 0}
- b. {- $\frac{2}{5}$, 4}
- c. {-4, - $\frac{2}{5}$, 4}
- d. {-4, 4}

Q10. Find an equation for the line with the given properties. Express the answer using the general form of the equation of a line.

Perpendicular to the line -4x + 5y = -23; containing the point (-3, 7)

- a. -3x - 5y = -23
- b. -4x - 5 = -4
- c. -5x + 4y = -13
- d. -5x - 4y = -13

Q11. Bob can overhaul a boat's diesel inboard engine in 15 hours. His apprentice takes 30 hours to do the same job. How long would it take them working together assuming no gain or loss in efficiency?

- a. 10 hr
- b. 45 hr
- c. 6 hr
- d. 4 hr

Q12. A chemist needs 60 milliliters of a 45% solution but has only 35% and 65% solutions available. Find how many milliliters of each that should be mixed to get the desired solution.

- a. 20 ml of 35%; 40 ml of 65%
- b. 10 ml of 35%; 50 ml of 65%
- c. 40 ml of 35%; 20 ml of 65%
- d. 50 ml of 35%; 10 ml of 65%

Q13. Find an equation for the line with the given properties. Express the answer using the slope-intercept form of the equation of a line.

Slope = -2; y-intercept = -15

- a. y = -2x - 15
- b. y = -2x + 15
- c. y = -15x - 2
- d. y = -15x + 2

Q14. Write the expression in the standard form a + bi.

$\frac{5}{6i}$

- a. $\frac{5}{6}$ i
- b. $\frac{5}{6}$
- c. - $\frac{5}{6}$
- d. - $\frac{5}{6}$ i

Q15. Write the expression in the standard form a + bi.

i^{-55}

- a. 1
- b. -1
- c. -i
- d. i

Q16. The manager of a coffee shop has one type of coffee that sells for $5 per pound and another type that sells for $11 per pound. The manager wishes to mix 70 pounds of the $11 coffee to get a mixture that will sell for $7 per pound. How many pounds of the $5 coffee should be used?

- a. 70 lb
- b. 105 lb
- c. 140 lb
- d. 210 lb

Q17. Solve the equation.

|x - 6| = 0

- a. {-6}
- b. {6}
- c. {-6, 6}
- d. no real solution

Q18. Find an equation for the line with the given properties. Express the answer using the slope-intercept form of the equation of a line.

horizontal; containing the point (-7, -2)

- a. x = -7
- b. x = -2
- c. y = -7
- d. y = -2

Q19. How much pure acid should be mixed with 2 gallons of a 50% acid solution in order to get an 80% acid solution?

- a. 3 gal
- b. 5 gal
- c. 8 gal
- d. 1 gal

Q20. Find the real solutions of the equation by factoring.

$x^2 - 49 = 0$

- a. {7}
- b. {7, -7}
- c. {49}
- d. {-7}