

Name _____
Date _____

Introduction to Technical Mathematics
Class #16 – Review #1

Final Exam Review – Day 1-1

Section 1. Showing all work, partial credit can be given.

1. Solve for x: $6x - 35 = -5$

1. _____

2. Solve for x: $(x + 4) - (x - 5) + x = 10$

2. _____

3. Solve for x: $5(x - 4) = \frac{8 - 2x}{6}$

3. _____

4. Solve for x: $ax + b = cx + d$

4. _____

5. Solve for x: $ax + b = \frac{cx}{d}$

5. _____

6. Solve for x: $a(b + cx) = dx$

6. _____

Name _____
Date _____

Introduction to Technical Mathematics
Class #16 – Review #1

Final Exam Review – Day 1-2

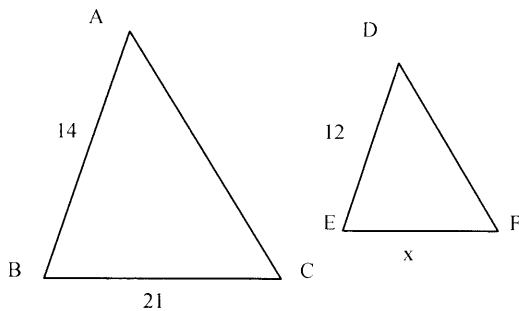
7. The perimeter of a rectangle is 560 in. The ratio of the width to the length of 3 : 4. Find the length and width of the rectangle

7. _____

8. A tree casts a shadow on the ground that is measured to stretch 40 feet from the base of the tree. At the same time, a 6 ft tall man casts a shadow on the ground that is 8 feet long. How tall is the tree?

8. _____

9. $\triangle ABC$ is similar to $\triangle DEF$. Find the value of x in the diagram.



9. _____

10. Convert 5.25 feet to cm.

10. _____

11. Convert 5.50 yds to meters

11. _____

12. Convert 126 cm to inches.

12. _____

Name _____
Date _____

Introduction to Technical Mathematics
Class #16 – Review #1

Final Exam Review – Day 1-3

13. Perform the indicated operations: $(-2x^2y^3)^3$

13. _____

14. Perform the indicated operations: $(-\frac{2}{3}a^2b^2c)^2(3ab^3)^2$

14. _____

15. Perform the indicated operations: $\frac{(6x^3y^5z)^2}{(3xy)^2}$

15. _____

16. Simplify: Write the final form with positive exponents only: $\frac{2^{-3}x^3y^4}{4x^{-2}y}$

16. _____

17. Simplify: Write the final form with positive exponents only: $\frac{5^2x^{-2}y^0z^6}{x^{-4}y^{-1}z^3}$

17. _____

18. Simplify: Write the final form with positive exponents only: $\frac{10^{-2}xy^{-2}z^{-6}}{5^{-2}x^3z^{-4}}$

18. _____

Name _____
Date _____

Introduction to Technical Mathematics
Class #16 – Review #1

Final Exam Review – Day 1-4

19. Perform the indicated operations: express your answer in scientific notation.

$$\frac{(2.20 \times 10^7)}{(8.82 \times 10^{-7})}$$

19. _____

20. Perform the indicated operations: express your answer in scientific notation.

$$\frac{(2.20 \times 10^7)(3.12 \times 10^{-12})}{(2.25 \times 10^{-5})}$$

20. _____

21. Perform the indicated operations: express your answer in scientific notation.

$$(1.25 \times 10^{12})(9.98 \times 10^4)$$

22. Simplify the Radical Expression:

$$\sqrt{200x^6y^{11}}$$

22. _____

23. Simplify the Radical Expression:

$$\sqrt{50a^3b^{11}c^{20}}$$

23. _____

24. Simplify the Cubed Root:

$$\sqrt[3]{54x^9y^4z^{11}}$$

24. _____

Name _____
Date _____

Introduction to Technical Mathematics
Class #16 – Review #1

Final Exam Review – Day 1-5

25. Simplify the Polynomial Expression: $3x - (5y - (3x - y))$

25. _____

26. Simplify the Polynomial Expression: $4 - x - (3 + (7 - 2x))$

26. _____

27. Simplify the Polynomial Expression: $-(xy - 3) - (yx + (4 - 3xy))$

27. _____

28. Perform the indicated operations, combine any like terms: $(5 + 2x)(1 - 3x)$

28. _____

29. Perform the indicated operations, combine any like terms: $(3y - 5)(2y + 3) - y(y + 2)$

29. _____

30. Perform the indicated operations, combine any like terms: $(x^2 - 2x + 3)(x^2 + 4x + 3)$

30. _____

30a. Divide: $\frac{5a^3b - 10a^2b + 15ab}{5ab}$

30a. _____

30b. Divide: $(6c^3 - 8c^2 - 17c - 6) \div (3c + 2)$

30b. _____

Name _____
Date _____

Introduction to Technical Mathematics
Class #16 – Review #1

Final Exam Review – Day 1-6

31. Factor Completely: $5x^2 - 125$ 31. _____

32. Factor Completely: $3x^2 - 2x - 5$ 32. _____

33. Factor Completely: $12x^2 + 13x - 4$ 33. _____

34. Factor Completely: $x^4 - 13x^2 + 36$ 34. _____

35. Factor Completely: $x^4 - 5x^2 + 4$ 35. _____

36. Factor Completely: $4ax^2 - 36ay^2$ 36. _____

37. Find the roots (solutions) for the following equation: $x^2 + 5x - 6 = 0$
37. _____

38. Find the roots (solutions) for the following equation: $2x^2 + 5x - 7 = 0$
38. _____

39. Find the roots (solutions) for the following equation: $x^2 - 7x = 0$
39. _____

Name _____
Date _____

Introduction to Technical Mathematics
Class #16 – Review #1

Final Exam Review – Day 1-7

40. Convert $32^{\circ} 14' 15''$ to degrees only (retain 4 significant digits)

40. _____

41. Convert $121^{\circ} 8' 45''$ to degrees only (retain 4 significant digits)

41. _____

42. Write to the nearest second 71.325°

42. _____

43. Perform the Indicated Operation:

$$\frac{5}{x+3} + \frac{4}{x}$$

43. _____

44. Perform the Indicated Operation:

$$\frac{4}{t-2} - \frac{t-2}{t+1}$$

44. _____

45. Perform the Indicated Operation:

$$\frac{6-5x}{6x^2-9x} - \frac{x-2}{3x}$$

45. _____