

Self Evaluation Skills Inventory Put your responses on the line provided. NO CALCULATORS. Each problem or part of problem is 1 point.

Evaluate problems 1 – 10 by performing the indicated operations and simplify.

1. $(-3)^4 = 81$ 2. $-3^4 = -81$ 3. $-\sqrt{64} = -8$ 4. $10^{-5} \cdot 10^2 = 10^{-3} = 0.001$

5. $|5.6 - 10.4| = 4.8$ 6. $\frac{10^4}{10^{-3}} = 10^7$ 7. $\frac{6 \cdot (3-6) + 6 \cdot 8}{6 \cdot (4-1)} = \frac{30}{18} = 1\frac{2}{3}$

8. $3^3 + 12 - 4(5-2) = 3^3 = 27$ 9. $\sqrt{27-18} + [-13-7+5] = -12$ 10. $|-9 \div |6-9| + 5^2| = 22$

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In problems 11 – 14, convert each of the decimals to a percent.

11. $0.56 = 56\%$ 12. $0.067 = 6.7\%$ 13. $1.015 = 101.5\%$ 14. $-0.123 = -12.3\%$

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15. Evaluate $\sqrt{a-b}$ given that $a = 81$ and $b = -63$. $\sqrt{a-b} = \sqrt{144} = 12$

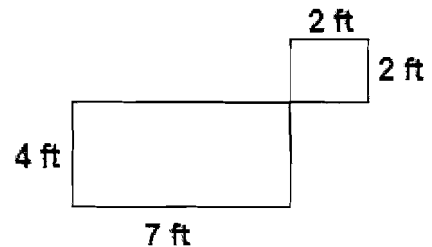
16. Simplify the expression $2.5x - 4 + 3.2x + 7.8$. $5.7x + 3.8$

17. A pest control company sprays insecticide around the perimeter of a 100 ft. by 170 ft. rectangular building. If the spray costs \$0.12 per foot, how much did the job cost to the nearest dollar?

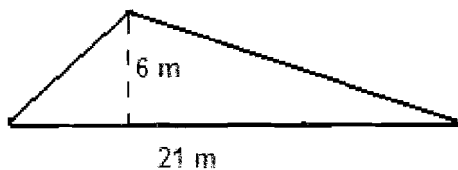
Cost = \$ 65

18. Find the area of the shaded region and state the units for the result.

Answer: $28 + 4 = 32 \text{ sq. ft}$



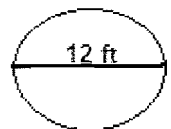
19. Find the area and state the units for the result.



Answer: $\frac{1}{2} (6) (21) = 63 \text{ sq. m}$

20. Find the **exact** value of the circumference and state the units for the result.

Answer: $12\pi \text{ ft}$



21. Solve these equations.

a. $2n + 3.6 = 4n - 8.9$ $n = 6.25$

b. $\frac{8}{3}r - \frac{2}{3} = \frac{13}{3} + r$ $r = 3$

22. Solve these formulas for the indicated variable.

a. $2x - y = 9$; $x = \frac{y+9}{2}$

b. $A = P + Prt$; $t = \frac{A-P}{Pr}$

23. Decide whether or not the given ordered pair is a solution for the given equation. Circle the appropriate response.

a. $y = \frac{3}{4}x - 2$; $(-12, -11)$ **YES** NO

b. $5x + 3y = 35$; $(4, 5)$ **YES** NO

24. Determine the slope and y-intercept of the graphs of these equations.

a. $y = \frac{3}{5}x - 2$ slope = $\frac{3}{5}$ y-intercept = -2

b. $4x - 3y = 7$ slope = $\frac{4}{3}$ y-intercept = $-\frac{7}{3}$

c. $9y - 3x = 18$ slope = $\frac{1}{3}$ y-intercept = 2

25. Perform the indicated operation and simplify as much as possible. Your answers should be expressed without negative exponents.

(a) $x \cdot x^{-8} = \frac{1}{x^7}$ (b) $x^{12} \div x^3 = x^9$ (c) $\frac{p^2}{p^{-7}} = p^9$ (d) $\frac{z^2 z^{-5}}{z^{-3}} = 1$

26. Evaluate the rational expression, $f(x) = \frac{3x-5}{x^2-4}$, for the given values of x.

a. $f(3) = \frac{4}{5}$

b. $f(0) = \frac{5}{4}$

c. $f(-2) = \text{undefined}$

27. A company rents copiers for a monthly charge of \$120 plus 6 cents per copy. If \$366 per month is budgeted for the use of the copiers, determine the maximum number of copies that can be made each month. let x = # of copies that could be printed

Answer: $.06x + 120 = 366 \Rightarrow x = 4100$

28. TRUE/FALSE Put the appropriate response on the line provided.

FALSE (a) A discount store is offering men's suit for 20% off. Two weeks later (in order to "move" the merchandise) they offer an additional 20% off. So the final price is 60% of the original price.

TRUE (b) A convenient approximation to π that is sometimes used is $\frac{22}{7}$. Using $\frac{22}{7}$ provides an approximation accurate to two decimal places.

FALSE (c) $\sqrt{x^2} = x$

(There are 40 points; if you get below 28 you might want to reconsider taking this course.)