

Proficiency Practice

Algebra

1. Sari works part-time 20 hours a week and earns \$6.75 an hour. If she saves $\frac{1}{3}$ of her pay each week, how much will she have left to spend?
 - a) \$45.00
 - b) \$90.00
 - c) \$105.00
 - d) \$135.00
2. Five CDs cost \$39.95. At this rate, what would three CDs cost?
 - a) \$2.66
 - b) \$7.99
 - c) \$23.97
 - d) \$31.96
3. If Bob runs a mile in $7\frac{1}{2}$ minutes and Tom runs 10 miles in 1 hour 15 minutes, how does Tom's rate compare to Bob's?
 - a) Tom's rate is slower
 - b) Tom's rate is faster
 - c) Their rates are the same
 - d) none of these
4. 7% sales tax on a pair of earrings is \$4.48. What was the price of the earrings before tax?
 - a) \$31.36
 - b) \$64
 - c) \$68
 - d) \$74
5. Elizabeth had a maximum of \$10 to spend on a movie, m , popcorn, p , and a drink, d . Write an inequality to represent this relationship.
 - a) $m + p \leq 10$
 - b) $m + p + d \leq 10$
 - c) $m + d + p = 10$
 - d) $m + p + d \geq 10$
6. Which property is illustrated by the following equation?

$$2 + 5(x + 1) = 2 + (x + 1)5$$
 - a) Associate property of addition
 - b) Associative property of multiplication
 - c) Commutative property of multiplication
 - d) Distributive property
7. Simplify: $3 + 5(b + 2)$
 - a) $5b + 15$
 - b) $8b + 16$
 - c) $8b + 8$
 - d) $5b + 13$
8. Consider the following:
 - I. $(A - B) + C = A - (B + C)$
 - II. $A(B - C) = AB - C$
 - III. $A - (B - C) = A - B + C$
 Which of the above *must* be true?
 - a) I and II
 - b) II only
 - c) II and III
 - d) III only
9. A data processing clerk can enter data at the rate of 144 entries in 2 minutes. At this rate, how many entries can the data processing clerk enter in 7 minutes?
 - a) 432 entries
 - b) 504 entries
 - c) 576 entries
 - d) 612 entries

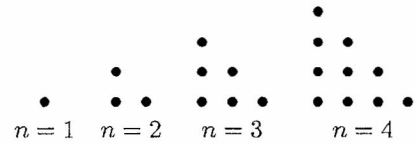
16. Give a formula for the number of dots in the n th figure in this sequence.

- a) $4n - 3$ b) $2n + 1$ c) $4(n - 1)$ d) $\frac{1}{2}n(n - 1)$



17. How many dots will be in the tenth figure ($n = 10$) of the sequence shown?

- a) 19 b) 50 c) 55 d) 100



18. Simplify: $3\sqrt{3} + (-6\sqrt{2}) + (-8\sqrt{3}) + 9\sqrt{2}$

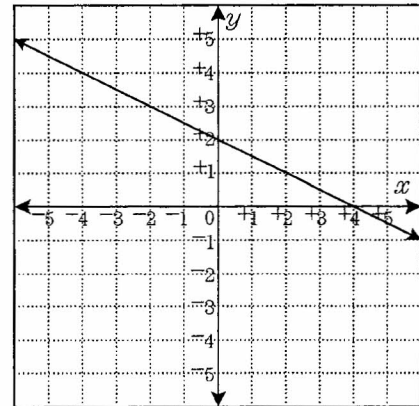
- a) $-15\sqrt{6}$ b) $3\sqrt{2} - 5\sqrt{3}$ c) $15\sqrt{2} + 11\sqrt{3}$ d) -9

19. Solve the formula $E = I(R + r)$ for r .

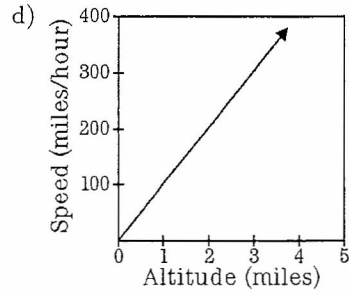
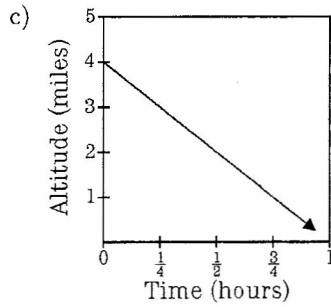
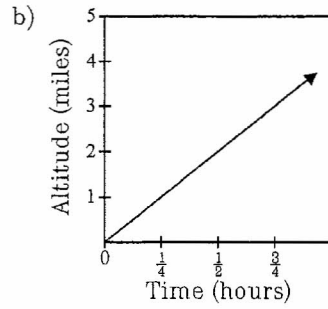
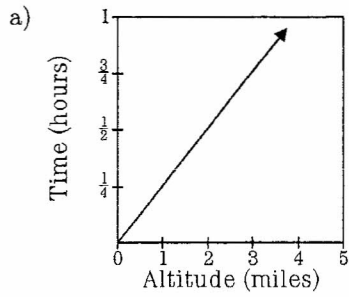
- a) $r = EIR$ b) $r = EI - R$ c) $r = \frac{E - IR}{I}$ d) $r = \frac{ER}{I}$

20. What is the slope of the line shown?

- a) -2 b) $-\frac{1}{2}$ c) $\frac{1}{2}$ d) 2



21. An airplane takes off and climbs at a rate of 1 mile every 15 minutes. Which of the following graphs best represents the altitude of airplane?



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Answer List

- | | | |
|-------|-------|-------|
| 1. b | 2. c | 3. c |
| 4. b | 5. b | 6. c |
| 7. d | 8. d | 9. b |
| 10. c | 11. c | 12. c |
| 13. c | 14. d | 15. b |
| 16. a | 17. c | 18. b |
| 19. c | 20. b | 21. b |

Catalog List

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|---------------|---------------|---------------|
| 1. NV1 KB 1 | 2. NV1 KB 6 | 3. NV1 KB 15 |
| 4. NV1 KB 27 | 5. NV1 KB 34 | 6. NV1 KC 5 |
| 7. NV1 KC 14 | 8. NV1 KC 36 | 9. NV1 KF 30 |
| 10. NV1 LA 28 | 11. NV1 LA 15 | 12. NV1 LB 7 |
| 13. NV1 LB 19 | 14. NV1 LC 10 | 15. NV1 PB 25 |
| 16. NC3 AE 4 | 17. NC3 AE 6 | 18. NC3 BA 15 |
| 19. NC3 CD 7 | 20. NC3 ED 7 | 21. NC3 JC 18 |