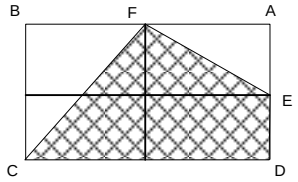
Answer Key

1. $3\times18 - 25 = \boxed{29}$
2. $\frac{7}{24} = 7/24$
3. 2
4. 1 hr & 30 min
5. $\frac{9}{14} = 9/14$
6. 240000
7. 70
8. 240
9. $3200\div5\frac{1}{3} = \boxed{600 \text{ mph}}$
10. C
    The area of the shaded region is 15 square inches, which
    $\frac{1}{2}+\frac{1}{8}=\frac{5}{8}$ of the area of ABCD.
    So, the area(ABCD) = 24 square inches.



11. $11.50 - 2\times3.50 = 4.50$
    $4.50 \div 3 = \boxed{\$1.50}$
12. $20\times20\times2 - 10\times10$
    $= 800 - 100$
    $= \boxed{700 \text{ in}^2}$
13. $800 = 2\times400$
    $400 = 20\times20$
    radius = 20
    2×20 = 40 cm (diameter)
14. $1\frac{3}{4}\times4\times3$ = 21 hours
15. $\frac{1}{4}\times10 = 2.5$
    $2.5 + 2.25 = 4.75$
    $10 - 4.75 = \boxed{5.25}$
16. 5
    $114\div2 = 57$
    $285\div57 = \boxed{5}$
17. $5 - 4 = 1$
    $1\div4 = \frac{1}{4}$
    $60\times\frac{1}{4} = \boxed{15}$
18. $300 - 60 = 240$
    $240\div5 = \boxed{\$48.00}$

2	24	64
2	12	32
2	6	16
	3	8

19. $2\times2\times2 = \boxed{8}$
20. There are 4 girls and 3 boys. From Alan's eyes, there are 2 boys, so the girls are twice the number of the boys. From Betty's eyes, there 3 girls, so there are the same number of girls and boys. 3 + 4 = $\boxed{7}$
21. $\frac{3}{4}\times144 = 108$
22. $\frac{24}{25}$
23. $\frac{8}{3}\times\frac{15}{4} = 10$
24. .49
25. 1.44
26. 1 3/7
27. 2
28. 0.2
29. $5(x + 3) = 30$
    $x + 3 = 6$
    $x = 3$
30. 4
31. $\frac{1}{4} = 1/4$
32. $7 + \mathbf{2}=9$
    $9 + \mathbf{6}=15$
    $15 + \mathbf{2}=17$
    $17 + \mathbf{6}=23$
    $23 + \mathbf{2}=25$
33. $5 - 3\frac{4}{5} = 1\frac{1}{5} = 1\ 1/5$
34. $9^4\times3^3 = 3^{\mathbf{11}}$
    $\square = 11$
35. 90°
36. C
37. I(3, -4.5)
38. 12
39. 30 ft
40. $2\times(1.5+2.7) = 8.4$
41. 0.0016
42. 0.0625
43. 50
44. 6
45. $(20\times0.35)^2 = 7^2 = 49$
46. 122.5

47. Multiply both sides by 20:
$.2(x - 1) - \frac{1}{4}x = 1$
$4(x - 1) - 5x = 20$
$-x = 24$
$x = -24$

48. Multiply both sides by 2, we have
$x - 1 + 6(x + 1) = 26$
$7x = 21$
$x = 3$

49. $1 - \frac{1}{8} - \frac{1}{4} - \frac{1}{3} = \frac{7}{24} = 7/24$

50. $\frac{12}{4} = 3$
$3^3 = 27$
$27 \div 3 = 9$ ft

51. $\frac{\text{increase}}{\text{original price}} = 40/200 = 0.2 = 20\%$

52. $\frac{5}{5+\frac{5}{1.5}} = \frac{1}{1+\frac{2}{3}} = 0.6 = 36$ min

53. $\frac{1}{2}(180° - 48°) = 66°$

54. $2250 - 1250 = 1000$
$1000 \div 1250 = 0.8 = 80\%$

55. The difference of the two bases = 12
The height is 16.
The area $= \frac{1}{2}(16)(4 + 16) = 160$

56. $2 \times 18 = 36$ (diameter of the outer circle)
$\frac{1}{4} \times (36 \times 3.14) = 28.26$ m
$2 \times 8 = 16$ (diameter of the inner circle)
$\frac{1}{4} \times (16 \times 3.14) = 12.56$ m
$28.26 + 12.56 + 20 = 60.82$ m
Don't forget the two radii☺.)

57. $\frac{3}{4} \times (1 - \frac{2}{3}) = \frac{1}{4} = 1/4$

58. The full circle has an area of 64π. The sector is $\frac{40}{64}$ $= \frac{5}{8}$ of the circle, so
$360 \times \frac{5}{8} = 225°$

59. $14^2 = 196$
$15^2 = 225$
$16^2 = 256$
$17^2 = 289$
$18^2 = 324$
Ans = 3 perfect squares.

60. B
Method I)
$183 - 184 = -1$
$183 - 178 = 5$
$183 - 191 = -8$
$183 - 167 = 16$
$\frac{1}{4}(-1 + 5 - 8 + 16) = \frac{1}{4}(12) = 3$ lb (above)

Method II)
The average weight of the backfielders:
$= \frac{1}{4}(184 + 178 + 191 + 167)$
$= 180$
$183 - 180 = 3$ (lb) above the average

61. -0.2

62. 144

63. $10.2 + 1.8 - 2\frac{1}{4} = 9\frac{3}{4} = 9\ 3/4$

64. $17 \div 250 = 0.068 = 6.8\%$

65. $8^{\square} = 2^9 \times 4^9 = (2 \times 4)^9 = 8^9$

66. 1

67. -5

68. $26 \div 2 = 13$
$(13 - 3) \div 2 = 5$
$5 + 3 = 8$
$5 \times 8 = 40$

69. In each hour,
Alex : $\frac{1}{6}$
Brian: $\frac{1}{9}$
Charlie: $\frac{1}{18}$
By working together in an hour, they will accomplish
$\frac{1}{6} + \frac{1}{9} + \frac{1}{18} = \frac{1}{3}$
So, they need $1/\frac{1}{3} = 3$ hours

70. $26 - 2 = 24$
$24 \div 2 = 12$ (Eden)
$12 + 2 = 14$ (Daryl's)

71. Method I)
6 units of grape can produce 1 unit of raisin.
$5 \times 6 = 30$ kg

	Pulp	Water
Grape	0.1	0.9
Raisin	0.6	0.4

Method II)
$1 - 40\% = 0.6$ (totally dehydrated)
$5 \times 0.6 = 3$ kg (pure raisins without water)
$\square \times 0.1 = 3$
$\square = 3 \div 0.1 = 30$ kg (fresh grapes)

72. $(5 - 2) \times 180° = 540°$
$540° \div 5 = 108$
$180 \div 3 \times 2 = 72°$

73. $84 \div (5+7+9) = 4$
$5 \times 4 = 20$
$7 \times 4 = 28$
$9 \times 4 = 36$
Ans = 20 (K) & 28 (J) & 36 (N)

74. $40 \times 5 = 200$
$200 - 140 = 60$
$5 - 3 = 2$
$60 \div 2 = 30$ (cars)
$30 \times 3 = 90$ students (by car)

75. $36 \div 2 = 18$
$18 - 6 = 12$
$6 \times 12 = 72$ in^2

76. 10

77. 25

78. -1.5×-8×-.02= -0.24

79. 400

80. 64

81. $y = 2$

82. Let x be the measure of the width. Then, the length is $2x + 5$. Thus, the perimeter is $2[x + (2x+5)] = 100$
$6x + 10 = 100$
$6x = 90$
$x = 15$
The length is 35. The area is 15×35 = 525 sq. inches.

83. speed = $\frac{\#rounds}{time}$
A's speed is 9/8 = 27/24
B's speed is 7/6 = 28/24
Ans = 27 min (for a) & 28 min (for b)

84. 3.75÷30% = 3.75÷0.3 = $12.50

85. 4 + (2 - (-7 + 6)) = 7
7×3 = 21

86. $x = \{ 1, 3, 5 \}$

87. 23 + 32 = 55
85 - 55 = 30
One more 32¢ will be the least,
so a total of 2×32 + 23 = 87¢

88. What is the total distance?
72 + 32 = 104 (mi)
What is the total time?
$\frac{72}{12}+\frac{32}{8}=10$
What is the average speed?
$\frac{104}{10}$= 10.4 (mph)

89. 104 + 1 = 105
105÷3 = 35
2×35 – 1 = 69

90. Let x and $2x + 15$ be complementary.
$x + 2x + 15 = 90$
$3x = 75$
$x = 25$

91. $45\times3\frac{1}{3}$ = 135 + 15 = 150 mi

92. 90÷45 = 2
4.5÷45 = 0.1 = 6 min
Ans = 2 hours & 6 min

93. A

94. C

95. C
$11^2 = 121$
$31^2 = 961$
$32^2 = 1024$

Answer Key

Synonym Replacement
1. B
2. A
3. B
4. A
5. A
6. C
7. A
8. B
9. A
10. C

Sentence Completion
11. C
12. D
13. B
14. D
15. B
16. A
17. A
18. A
19. B
20. A

Reading
21. B
22. B
23. A
24. C
25. B

Reading
26. A
27. A
28. A
29. D
30. B

Reading
31. C
32. D
33. C
34. A
35. C
36. D
37. B

Reading
38. B
39. B
40. C
41. C
42. C

Reading
43. B
44. C
45. A
46. B

Reading
47. B
48. D
49. C
50. B
51. D
52. A
53. A
54. A
55. B