Superman is Muscular
with the Prealgebra Monster

SOLUTIONS

1. $\frac{900 \text{ feet}}{1 \text{ minute}} = \frac{x \text{ feet}}{6 \text{ minutes}}$

$900(6) = x$

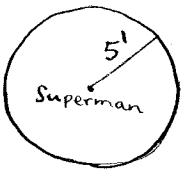
$5400 = x$ $\quad (C) = 5400$

2. $5-(3-2)+\left(\frac{3}{1}\right)6$

$5-3+2+18$

$2+2+18$

22 $\quad (B)\ 22$

3. 

$A = \pi r^2 \text{ ft}^2$

$= \pi(5)^2 \text{ ft}^2$

$= 25\pi \text{ ft}^2$

(B) 25π square feet

4. $(3+8(6)) + (4(7)+5)$

$(3+48) + (28+5)$

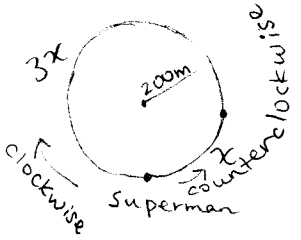
$51 + 33$

84 $\quad (B)\ 84$

5. $52(100+3) = 52(3+100)$

$100+3 = 3+100$

(C) The Commutative Property of Addition

6. 

$C = 2\pi r$

$= 2\pi(200)$

$= 400\pi$

$C = x + 3x$

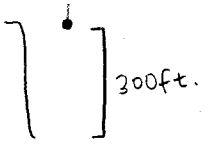
$= 4x$

$4x = 400\pi$

$x = 100\pi$

$3x = 3(100\pi) = 300\pi$

(D) 300π m

7. 

$300ft = 100yd$

$\frac{100yd}{x} = \frac{10yd}{1min.}$

$100 = 10x$

$x = 10min = 600$ seconds

(D) 600 seconds

8. (1, 53) (2, 70) (3, 87) (4, 104) (5, 121)

+17 +17 +17 +17

121 buildings in 5 leaps

(E) NOTA

9. $\frac{84}{100} = \frac{42}{50} = \frac{21}{25}$

(B) $\frac{21}{25}$

10. $\frac{17}{79} \Rightarrow 79\overline{)170}\ 0.21\ldots$ ← greatest

-158

120

-79

$\frac{1}{7} \Rightarrow 7\overline{)10}\ 0.14\ldots$

-7

34

-28

$\frac{13}{67} \Rightarrow 67\overline{)130}\ 0.1\ldots$

-67

63

(B) $\frac{17}{79}$

11. 56 → 8, 7 ; 112 → 16, 7

(D) 7

12. $7x + 9{,}877 = 87{,}654$

$7x = 77{,}777$

$x = 11{,}111$

(A) 11111

13. Leap year: February has 29 days.

$257(29) + 999 = 7453 + 999 = 8452$

(D) 8452

14. $60ft \times 36inches = 60ft \times 3ft = 360ft^2$

$\frac{3600ft^2}{1\ sec} = \frac{360ft^2}{x}$

$360 = 3600x$

$x = 0.1$ seconds

(E) NOTA

15. $\sqrt{36} = 6 \quad \sqrt{49} = 7$

$6 < \sqrt{41} < 7$

(B) 6

16. 3672.09 ft/min in space

432.88 ft/min on earth

$$\begin{array}{r} 3672.09 \\ -\ 432.88 \\ \hline 3239.21 \end{array}$$

(C) 3239.21 feet

17. $f^2 \cdot f^3 = f^{(2+3)} = f^5$

(A) 7^5

18. $B = 4L \quad D = 7B$

B = Braniac
L = Lex Luthor
D = Doomsday

$\frac{D}{7} = B$

$\frac{D}{7} = 4L$

$D = 28L$

(D) 28 times

19. 753 people in 2 min.

84 people/min after 2 min

102 min. − 2 min. = 100 min.

$(100)(84) = 8400$ ← 100 min.

$+ \ 753$ ← 2 min

9153 people in 102 min.

(C) 9153 people

20. $((888)(\$4))\,1.10 = ((1.10)(\$4))\,888$

$(888)(\$4)(1.10) \quad (888)(\$4)(1.10)$

(C) The prices are equal.

21. $888\left(\frac{1}{111}\right) = 8$

(A) 8

22. $\frac{24}{24} = \frac{15}{24} + \frac{1}{8} + x$

$\frac{24}{24} = \frac{15}{24} + \frac{3}{24} + x$

$\frac{24}{24} = \frac{18}{24} + x$

$\frac{6}{24} = x$

$x = \frac{1}{4}$

(B) $\frac{1}{4}$

23. $\frac{52 \text{ meteors}}{2 \text{ hours}} = \frac{x}{2 \text{ days}}$

2 days = 48 hours

$x = 1248$

$\frac{52 \text{ meteors}}{2 \text{ hours}} = \frac{x}{48 \text{ hours}}$ (C) 1248

24. $4302.190 + 43.201 = 4345.391$

(A) 4345.391 seconds

25. 43248 children in 12 months

$$12 \overline{)43248} = 3604$$

-36

72

-72

048

(E) NOTA

26. $100, 81, 64, \_$

$10^2, 9^2, 8^2, 7^2$

$7^2 = 49$

(D) 49

27. $53 + x < 490$

$x < 437$

(E) NOTA

28. $[3(4+8-2)+6(8)]\,39$

$[3(10)+48]\,39$

$(30+48)\,39$

$(78)\,39$

3042

(B) 3042

29. Superman Lois Lane Jimmy Olsen Lara Lang

(B) 6

30. $\frac{112}{112} = \frac{3}{56} + \frac{7}{112} + x$

$\frac{112}{112} = \frac{6}{112} + \frac{7}{112} + x$

$\frac{112}{112} = \frac{13}{113} + x$

$\frac{99}{112} = x$

(C) $\frac{99}{112}$