Charlie and the Chocolate Factory

1. $3\frac{1}{2} = \frac{7}{2}$ $2\frac{1}{3} = \frac{7}{3}$

$(\frac{7}{2})(20) + (\frac{7}{3})(18) = 70 + 42 = 112$

c) 112

2. 2 weeks = 14 days

$\frac{6+8+7+7+4+9+5+8+9+9+6+8+10+7}{14} =$

$\frac{105}{14} \approx 7.71$

b) 7.7

3. $\frac{36 \text{ hour}}{1} \times \frac{60 \text{ minutes}}{1 \text{ hour}} = 2160 \text{ minutes}$

b) 2160

4. $\frac{1.75}{2.50} = \frac{175}{250} = 0.7 = 70\%$

d) 70

5. $52 \text{ in} \times \frac{1}{13} = 52 \text{ in} \div 13 = 4 \text{ in}.$

b) 4 in.

6. $3x - 1050 + 49 = 2449$

$3x - 1001 = 2449$

$+1001 \quad +1001$

$3x = 3450$

$x = 1150$

b) 1150

7. Oompa-Loompa #3 = 30
Oompa-Loompa #2 = $\frac{2}{3}(30) = 20$
Oompa-Loompa #1 = $\frac{1}{2}(20) + 2 = 10 + 2$
$= 12$

$20 + 12 = 32$
a) 32

8. $10t + 10 = 110$ $\quad$ $6t + 10 = 100$
$10t = 100$ $\quad$ $6t = 90$
$t = 10$ $\quad$ $t = 15$
He watches between 10 and 15 hours of T.V. a week.
b) 12

9. Area = πr^2
$r = 21$ ft. $= 7$ yd.
Area = $\pi(7\text{ yd})^2 = 49\pi$ yd.^{2}
e) NOTA

10. $\frac{[(6+12\div2)+(2)(2)]}{[2+1\cdot2]}$
$\frac{(6+6)+4}{(2+2)}$
$\frac{12+4}{4}$
$\frac{16}{4}$
4
c) 4

11. $\frac{1}{2}(10+20)(8) = \frac{1}{2}(30)(8) = \frac{1}{2}(240) = 120$
e) NOTA

12. $6 \times 5 \times 4 \times 1 \times 3 \times 2 \times 1 = 720$
c) 720

13. $((2)^2)^{6/2} = ((2)^2)^3 = (2)^6 = 64$
d) 64

14. $\frac{1001!}{1000!} = \frac{1000!\,1001}{1000!} = 1001$
c) 1001

15. Charlie Augustus Venica Mike Violet
b) Augustus

16. $2 = 1+1$ not prime
$3 = 1+2$ 1 is not prime
$4 = 2+2$ not distinct
$1+3$ 1 is not prime
$5 = 2+3$ 2 distinct prime numbers
d) 5

17. Not enough information
e) NOTA

18. Volume = Area of base × height of prism
$V = \frac{1}{2}(2\text{ ft.} + 4\text{ ft.})(2\text{ ft.}) \times 11\text{ ft.}$
$= \frac{1}{2}(6\text{ ft.})(2\text{ ft.}) \times 11\text{ ft.}$

$= 6 ft.^2 \times 11 ft.$
$= 66 ft.^3$
c) $66 ft.^3$

19. $10c > 20$ $\quad 3b \leq 0$
$c > 2$ $\quad b \leq 0$
c must be positive number
b must be 0 or a negative number
Therefore, cb cannot be positive.
a) 2

20. $3^{4x} = 3^{52}$
$4x = 52$
$x = 13$
b) 13

21. $y^0 = 1$
c) 1

22. $15x^4y^6 = 3 \cdot 5 \cdot x^2 \cdot x^2 \cdot y^3 \cdot y^3$
$30x^2y^3 = 2 \cdot 3 \cdot 5 \cdot x^2 \cdot y^3$
$45x^9y^{10} = 3 \cdot 3 \cdot 5 \cdot x^2 \cdot x^7 \cdot y^3 \cdot y^7$
$GCF = 3 \cdot 5 \cdot x^2 \cdot y^3$
a) $15x^2y^3$

23. $\frac{3wo^3n^2k^5a}{3} \cdot \frac{24w^2o^3nka}{36w^2o^3nk^2a^3}$
$\frac{2wo^3n^2k^5 \cdot k \cdot a \cdot a}{3k^2a^3a}$

$\frac{2wo^3n^2k^4}{3a}$

a)

24. $\frac{14}{3}g - \frac{2}{3} = \frac{164}{6}$

$\frac{14}{3}g + \frac{2}{3} = \frac{164}{6} + \frac{2}{3}$

$\frac{14}{3}g = \frac{164}{6} + \frac{4}{6}$

$\left(\frac{14}{3}g = \frac{168}{6}\right)\frac{3}{14}$

$g = \frac{12}{2}$

a) 6

25. 240% = 2.4

15 × 2.4 = 36

a) 36

26. 252 oz ÷ 7 = 36 oz per day

36 oz ÷ 3 = 12 oz per meal

16 oz in a lb

$\frac{12}{16} = \frac{3}{4} = 0.75$ lb

b) 0.75 lb

27. 3 = a 4 = b

$3^2 + 4^3 = 9 + 64 = 73$

28. 20.85 ÷ 5 = 4.17

He will need an additional bag to hold the extra licorice that will not fit into the 4 bags

c) 5

29. $\frac{\left(\frac{3}{4}\right)\left(\frac{7}{6}\right)}{\left(\frac{3}{2}\right) \div \left(\frac{5}{13}\right)} = \frac{\frac{21}{24}}{\frac{3}{2} \times \frac{13}{5}} = \frac{\frac{21}{24}}{\frac{13}{2}} =$

$\frac{21}{12 \cdot 24} \times \frac{2}{13} = \frac{21}{12 \cdot 13} = \frac{21}{156} = \frac{7}{52}$

(e) NOTA

30. $\frac{x}{28} = \frac{9}{14}$

$14x = 252$

$x = 18$

(d) 18

OR

$\frac{x}{28} = \left(\frac{9}{14}\right)\frac{2}{2}$

$\frac{x}{28} = \frac{9 \cdot 2}{28}$

$x = 9 \cdot 2 = 18$