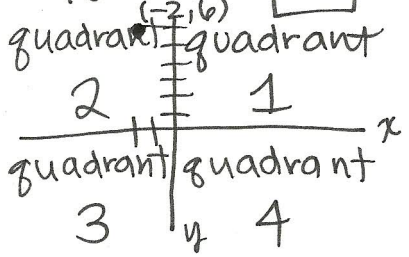
PREALGEBRA SOLUTIONS

Toy Story

1] $2(9) - (11+3) \div 2$

$18 - 14 \div 2$

$18 - 7 = \boxed{11}$ B

2] 

B

3] x = smallest of the four consecutive numbers

The other three numbers would then be

$x+2, x+4, x+6$

Thus, $(x)+(x+2)+(x+4)+(x+6)=84$

$4x+12=84$ $\boxed{x=18}$ E

$\frac{4x}{4} = \frac{72}{4}$

4] Mr. Potato Head : .87 shortest

Woody : 2.72 tallest

Slinky Dog : 1.7 third tallest C

Rex : 2.5 second tallest

5] $6x - 4x = 28$

$2x = 28$

$x = 14$ B

$14 \cdot 60 = \boxed{840}$

6] A = # of pizza slices Andy ate

D = # of pizza slices Ms. Davis ate

M = # of pizza slices Molly ate C

$\boxed{4, 2, 5}$

$A = 2(2) = 4$

$D = 4+1 = 5$

$A = 2M$ $D = A+1$ which is also $D = 2M+1$

$A + M + D + 5 = 16$ ← 2 pizzas • 8 slices = 16

$A+M+D = 11$; substitute and get $2M+M+2M+1 = 11$ $5M = 10$ $M = 2$

7] Gross revenue of Toy Story 1 was $361,958,736
Gross revenue of Toy Story 2 was $485,015,179

$485,015,179
−$361,958,136
$123,056,443

B

8] $\frac{5\frac{1}{4}\text{ inches}}{3\text{ hours}} \times \frac{24\text{ hrs}}{1\text{ day}} = \frac{\frac{21}{4}\text{ inches} \times 8}{1\text{ day}} = \boxed{\frac{42\text{ inches}}{1\text{ day}}}$ D

9] 5.8 inches × 122%

1.22
5.8
976
610
7.076 in ⇒ length of Slinky Dog's stretched body

7.076 inches − 5.8 inches = **1.276 inches**

C

10] 3 pairs of shoes × 6 pairs of pants × 7 shirts × 4 hats

= 618
× 28
144
36
504

504 different outfits

E

11] $-\frac{9}{19} = n - 11$

$-\frac{9}{19} + 11 = n$

$-\frac{9}{19} + \frac{209}{19} = n$

$\frac{200}{19} = n$

11
× 19
99
11
209

10
19)200
−19
10

$\boxed{10\frac{10}{19}} = n$

B

12] ① Mr. PH ____ ____ Mrs. PH
② Woody
③ Rex
④ Hamm
⑤ BUZZ

cont.

12 cont. ① 2 toys between Mr. PH & Mrs. PH; Mr. PH jumped after Mrs. PH

② Mr. PH jumped sometime before Woody

③ Mrs. PH jumped out after Rex

④ Hamm jumped out before Buzz

⑤ Buzz jumped out sometime after Rex & Woody jumped out sometime after Buzz

C

Therefore, Rex, Mrs. PH, Hamm, Buzz, Mr. Potato Head, Woody

13] q = # of quarters

$q + \frac{3}{2}q + 3q = 22$

$\frac{\frac{11}{2}q}{\frac{11}{2}} = \frac{22}{\frac{11}{2}}$ $q = 4$

★ in terms of q, dimes $= \frac{3}{2}q$ and nickels $= 3q$

$\frac{3}{2}(4) =$ 6 dimes

$3(4) =$ 12 nickels

4, 6, 12

C

4, 6, 12

14] $28 - 8x \geq -4(6 + 4x)$

$28 - 8x \geq -24 - 16x$

$-28 \quad -28$

$-8x \geq -52 - 16x$

$+16x \quad +16x$

$\frac{8x}{8} \geq \frac{-52}{8}$ $x \geq -\frac{52}{8}$ ← -6.5

a) $-\frac{2}{13} \approx -.1538$

b) $-\frac{15}{4} = -3.75$

c) $-\frac{13}{2} = -6.5$

d) $-\frac{20}{3} \approx -6.6667$ ← less than -6.5

D

15] $\frac{85 \div 5}{100 \div 5} = \frac{17}{20}$ B

16]

x	y
2	3
3	5
5	9
9	17
17	33
33	65
65	129

use $2x - 1 = y$

therefore,

$2(65) - 1 = 130 - 1 = 129$ A

17] $\frac{-38.48}{-4.2} = \frac{-4.2x}{-4.2}$ $-4.2\overline{)-38.48} \Rightarrow$

$42\overline{)384.8}$ → 9.161... round 9.161 to get 9.16

-378

6.8

-4.2

2.60

-2.52

80

B

18] $A = \pi r^2$

$\frac{16\pi}{\pi} = \frac{\pi r^2}{\pi}$

$\sqrt{16} = \sqrt{r^2}$

$r = 4$

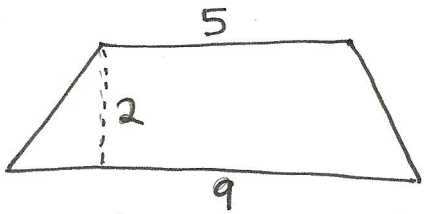
$C = 2\pi r$

$C = 2\pi \cdot 4$

$C = \boxed{8\pi}$

C

19]



smallest prime # = 2 ← height

shorter base (GCF of 25, 35, 60) = 5

longer base = 5(2) − 1 = 10 − 1 = 9

$A = \left(\frac{5+9}{2}\right)2 = \boxed{14}$

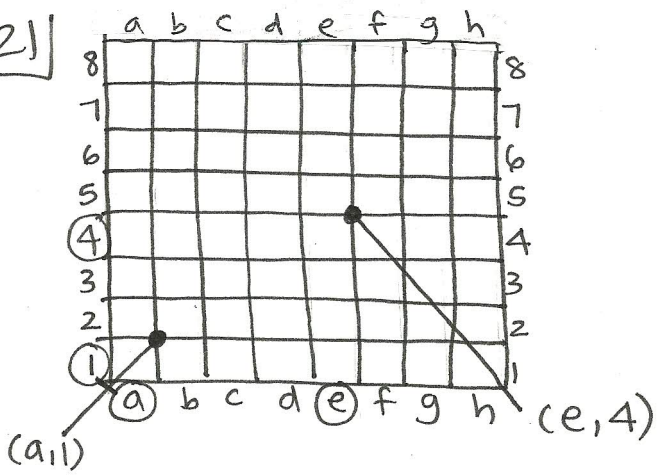
B

20] $(5^n)^2 = 5^6$; so, $5^{2n} = 5^6$, and $\frac{2n}{2} = \frac{6}{2}$ $n = \boxed{3}$

bases are the same

D

21]



B

22] slope $= \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1}$

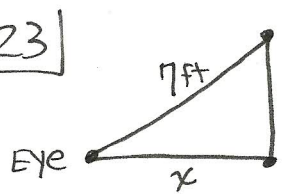
therefore, $\frac{6-1}{f-b} = \boxed{\frac{5}{f-b}}$

toy soldier starts at (b, 1)

ends up at (f, 6)

A

23]



$(4)^2 + (x)^2 = (7)^2$

$16 + x^2 = 49$

$-16 \quad -16$

$\sqrt{x^2} = \sqrt{33}$

$x = \boxed{\sqrt{33}}$

B

24] I. commutative property ; False

II. commutative property cannot be used for subtraction ; False

III. True (order changed)

IV. True (different grouping)

2 C

25] $(2q^3 3r^4 \cdot 2q^3 r^3)^2 = (4q^6 3r^7)^2 = \boxed{16q^{12} 9r^{14}}$ B

26] $\frac{7!\,5!}{6!\,4!} = \frac{7 \cdot 6! \cdot 5 \cdot 4!}{6! \cdot 4!} = 7 \cdot 5 = \boxed{35}$ A

$\frac{7 \cdot \overbrace{6 \cdot 5 \cdot 4 \cdot 3 \cdot 2 \cdot 1}^{6!} \cdot 5 \cdot \overbrace{4 \cdot 3 \cdot 2 \cdot 1}^{4!}}{\underbrace{6 \cdot 5 \cdot 4 \cdot 3 \cdot 2 \cdot 1}_{6!} \cdot \underbrace{4 \cdot 3 \cdot 2 \cdot 1}_{4!}}$ ← because

27] A = hexagon has 6 sides

B = GCF of 48, 60, 84 is 12

C = LCM of 10, 14, 18 is 630

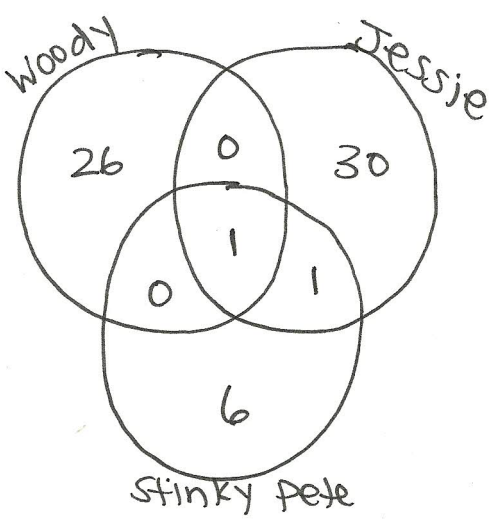
$t = 2(6^2) + 4 \cdot 12 - 630 \div 10$

$= 2(36) + 4 \cdot 12 - 630 \div 10$

$= 72 + 48 - 63$ B

$= \boxed{57}$

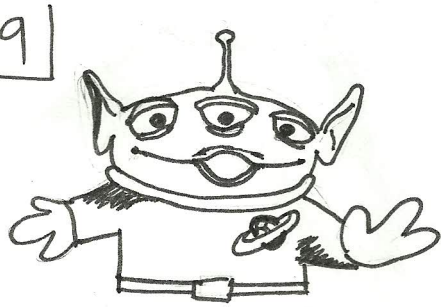
28]

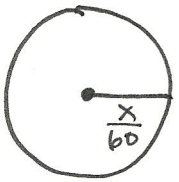


26+30=56

D

29]





$x = 23$

$\frac{23}{60}$: radius

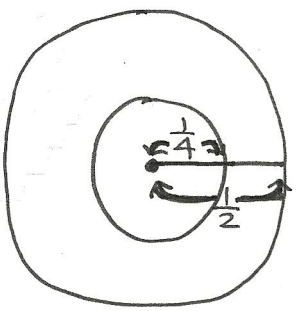
circumference of one eye

$C = 2\pi r = 2\pi\left(\frac{23}{60}\right) = \left(\frac{23}{30}\right)\pi =$

total circumference of one alien's three eyes

$3 \cdot \left(\frac{23}{30}\right)\pi = \boxed{\left(\frac{23}{10}\right)\pi} = \boxed{\frac{23\pi}{10}}$ A

30]



$A_{\text{BIG CIRCLE (eye)}} = \pi\left(\frac{1}{2}\right)^2 = \left(\frac{1}{4}\right)\pi = \left(\frac{4}{16}\right)\pi$

$A_{\text{SMALL CIRCLE (iris)}} = \pi\left(\frac{1}{4}\right)^2 = \left(\frac{1}{16}\right)\pi$

$A_{\text{SCLERA}} = \left(\frac{4}{16}\right)\pi - \left(\frac{1}{16}\right)\pi = \left(\frac{3}{16}\right)\pi$

$= \boxed{\frac{3\pi}{16}}$ D