Test 3 section 2 (518)

1) D
2) B
3) B
4) D
5) E
6) E
7) C
8) A
9) A
10) B
11) C
12) C
13) B
14) A
15) C
16) E
17) A
18) A
19) C
20) C

Jul 12-9:37 AM

4) $f(-3) > f(3)$ (D)

eliminate a, b, e

A) $f(x) = 4x^2$ $f(-3) = 4(-3)^2$ $f(3) = 4(3)^2$

B) f(anything) = 4

C) $f(x) = \frac{4}{x}$ $f(-3) = -\frac{4}{3}$ $f(3) = \frac{4}{3}$

D) $f(x) = 4 - x^3$ $f(-3) = 4 - (-27)$ $f(3) = 4 - (27)$

E) see A $(-3)^4 = (3)^4$

$4 + 27 > 4 - 27$

5) $F \sim X$

$F = kX$

$15 = k(8)$

$\frac{15}{8} = k$

$F = \frac{15}{8}X$

$F = \frac{15}{8}(20)$

$\frac{15}{8} = \frac{x}{20}$

(E)

6)

(E)

I ✓

II x $\frac{1}{2}xz = xy$ not $2xy$

$xz = 2xy$ not $\frac{1}{2}xz$

III ✓

7) $2r = 55$ $55 = 6t$

$2r = 6t$

$r = 3t$

C

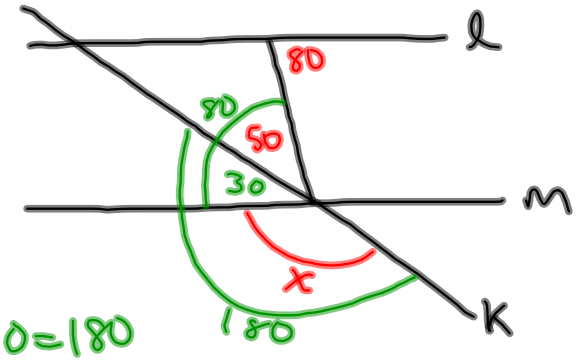
8) $\underbrace{x-3}_{\text{other bus}} + \underbrace{(n-1)x}_{\text{full buses}} = k$

$x - 3 + nx - x = k$

$nx - 3 = k$

A

9)



$x+30=180$

$x=150$

10) try them (B) $3x^2 < 9x^2$

11) $P_b = 2\pi r$

$P_f = 2\pi \frac{r}{2} = \pi r$ (C)

12) $3 = \#\text{pos}$ $5 = \text{total}$ so $2 = \#\text{neg}$ $\frac{n}{p} = \frac{2}{3}$ (C)

13) $c(20) = \frac{600(20) - 200}{20} + k = 640$

$600 - 10 + k = 640$

$-10 + k = 40$

$k = 50$ (B)

14) (1,1) ✓ (2,1) x (1,2) x (A)

15) P(ABC) = 21

DEF is equilateral so P = 15 (C)

16) $y = x + 2$

$y^2 = x^2 + 4x + 4$

$y^2 - x^2 = 4x + 4$ (E)

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

FOIL

16 alt) pick any 2 consec. odd ints

$x = 3$
$y = 5$

$y^2 - x^2 = 25 - 9 = 16$

A) $2(3)$
B) $4(3)$
C) $2(3)+2$
D) $2(3)+4 = 10$
E) $4(3)+4 = 16$ ✓

17) $4x+y=k$

$y=-4x+k \quad m=-4 \Rightarrow m_\ell = +\frac{1}{4}$

ℓ y-int=0 so $y=\frac{1}{4}x+0$ is equation of ℓ

$(t, t+1)$ is on ℓ

$t+1=\frac{1}{4}t$

$4t+4=t$

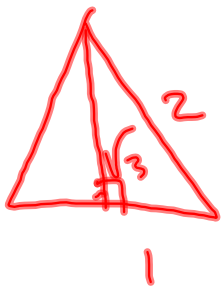
$3t=-4$

$t=-\frac{4}{3}$

(A)

18) $\frac{x+y}{2}=k$ $\frac{x+y+z}{3} \Rightarrow \frac{2k+z}{3}$ (A)

$x+y=2k$

19) 

$R=\frac{\sqrt{3}}{2}$

$A=\pi\left(\frac{\sqrt{3}}{2}\right)^2=\frac{3\pi}{4}$ (C)

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20) $15\div 12 = 1$ R3

$15\div 6 = 2$ R3

$15\div 4 = 3$ R3 (C)

Test 3 section 4 (530)

1) A
2) C
3) D
4) D
5) E
6) D
7) E
8) C
9) 7
10) 13
11) 135
12) 46
13) 28
14) 70
15) 7/15, .466, .467
16) 3
17) 4/9, .444
18) 2,18

Jul 19-10:58 AM

① $s+t=3$

$-6 \quad -6$

$s+t-6=-3$ (A)

② (C) duh!

③ ~~A~~ ~~B~~ ~~E~~ 75% = 3/4

& no "other" (D)

4) $n = d - 5$

~~$n = 5 - d$~~

$\frac{n}{d} = \frac{d-5}{d} = \frac{3}{4}$

$\frac{3}{4}$ $\frac{6}{8}$ $\frac{9}{12}$ $\frac{12}{16}$ $\frac{15}{20}$

$4(d-5) = 3d$

$4d - 20 = 3d$

$d = 20$

$\frac{15}{20}$

D

5) $A = \frac{1}{2}(3k)(4) = 18$

$\frac{1}{2}(12k) = 18$

$6k = 18$

$k = 3$

F

6) $\frac{10m^2k^{-1}}{m^2} = \frac{100m}{m^2}$

$10k^{-1} = \frac{100}{m}$

$\frac{10k^{-1}}{10} = m^{-1}$

$\frac{1}{10k}$

D

$10m^2k^{-1} = 100m$

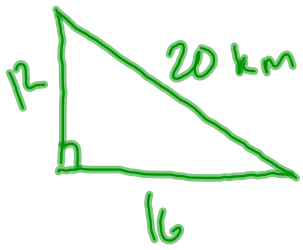
$mk^{-1} = 10$

$\frac{m}{k} = 10$

$m = 10k$

$\frac{1}{m} = \frac{1}{10k} = m^{-1}$

7)

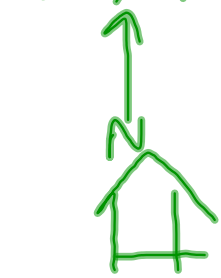


$\sqrt{12^2+16^2} =$

$\sqrt{144+256} =$

$\sqrt{400} = 20$

E



E → 4(4) = 16km

8) $f(6)=f(3)=5$

$f(-1)=5$

C

$y=5$

$x=?$ 3, -1

9) $5_p \times 4 \text{ days} = 20 \text{ bottles}$

$7 \times 3 = 21 \text{ bottles}$

10) $|10-k| = 3$

$|k-5| = 8$

$|10-k| = 3$ | $-(10-k) = 3$

$10-k = 3$ | $10-k = -3$

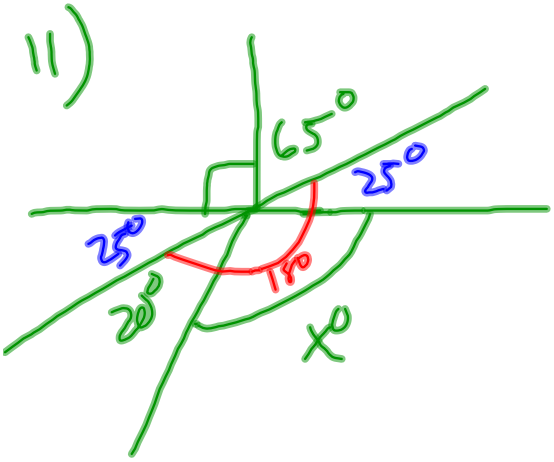
$-k = -7$ | $-k = -13$

$k = 7$ | $k = 13$

$|13-5| = 8$

$|8| = 8$

11)



$25+20+x=180^\circ$

$x=135^\circ$

12)

38 39 40 41 42 43 44 45 46

13) $f(x)=x+1$

$2f(p)=20 \Rightarrow 2(p+1)=20$

$2p+2=20$

$2p=18$

$p=9$

$f(3p)=?$

$f(3\cdot 9)=f(27)=28$

$f(3p)=(3p)+1$

$=28$

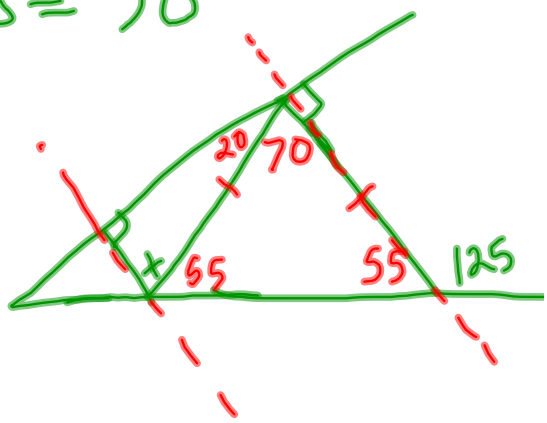
14) $\angle LMN = 55^\circ$ $\quad 180-125$

$\angle LNM = 55^\circ$ $\quad$ isoceles $\triangle$

$\angle MLN = 180-55-55 = 70$

$\angle KLN = 20$

$\angle KNL = x^\circ = 70^\circ$



15) $\frac{1}{5}c$ oranges

$\frac{4}{5}c$ orange, grapf, pine

$\frac{1}{3} \cdot \frac{4}{5} = \frac{4}{15}$

$\frac{4}{15} + \frac{1}{5}\left(\frac{3}{3}\right) = \frac{4}{15} + \frac{3}{15} = \frac{7}{15}c$

16) $a+2b=(1.25)(4b)$

$= \frac{5}{4}\,4b$

$a+2b = 5b$

$a = 3b$

$\frac{a}{b} = \frac{3b}{b} = 3$

17) $\sqrt{x} = \frac{6}{9} = \frac{2}{3}$

$x = \frac{4}{9}$

$\sqrt{x} = \frac{6}{9}$

$x = \frac{36}{81}$

can't bubble this :(

18)

(10, 18)
(x, 3)

$d = \sqrt{(10-x)^2 + (18-3)^2}$

$d^2 = (10-x)^2 + (15)^2$

$d^2 = 100 - 20x + x^2 + 225$

$17^2 = x^2 - 20x + 325$

-289

$0 = x^2 - 20x + 36$

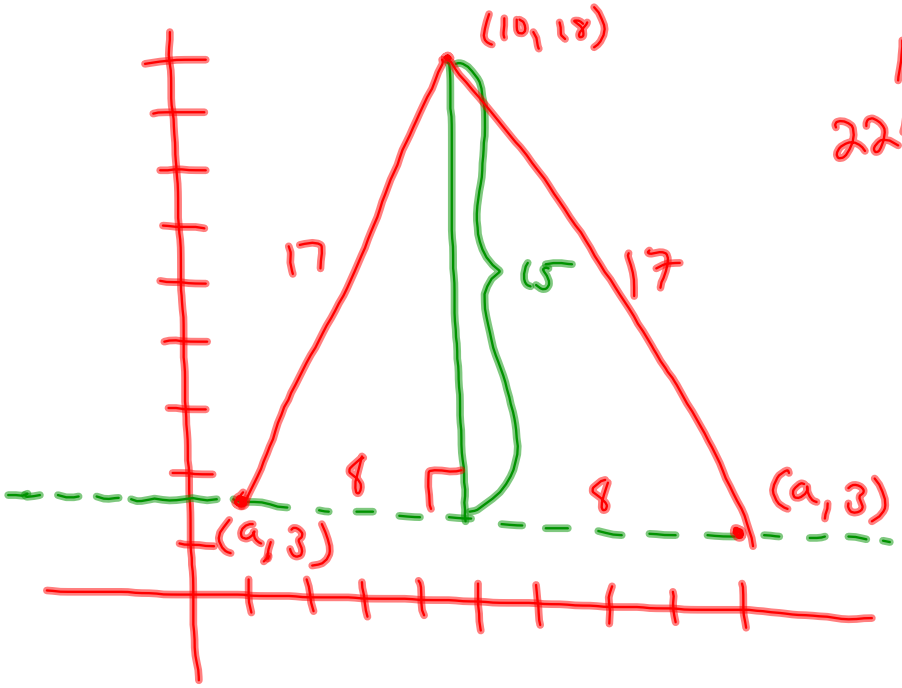
$(10-x)(10-x)$

$100 - 10x - 10x + x^2$

$100 - 20x + x^2$

$(x-2)(x-18) = 0$

$x = 2$ $x = 18$



$15^2 + x^2 = 17^2$

$225 + x^2 = 289$

$x^2 = 64$

$x = 8$

$a = 10 + 2 = 18$

$a = 10 - 2 = 2$

Test 3 section 8 (547)

1) B
2) B
3) A
4) C
5) D
6) B
7) A
8) E
9) D
10) B
11) A
12) B
13) C
14) E
15) A
16) E

#1 $E = \{\ldots -2, 0, 2, 4, 6 \ldots\}$

$P = \{1, 2, 3, 4, 5, \ldots\}$

$F = \{\ldots -3, -2, -1, 0, 1, 2, 3, 4\}$

(B) -4

#2 $8 + \sqrt{k} = 15$

$\sqrt{k} = 7$

$(\sqrt{k})^2 = 7^2$

(B) $k = 49$

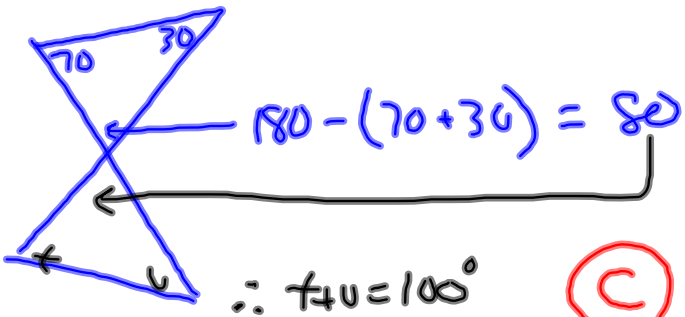
#3

35 for
14 against
1 ?
50 people

$\frac{35}{50}$ in favor

$\frac{7}{10}$ (A)

#4



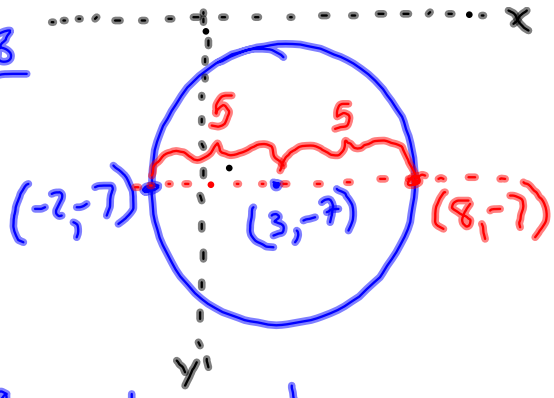
$\therefore t + u = 100^\circ$ (C)

#5
'81 - '82 = 25¢
'82 - '83 = 75¢
'83 - '84 = 50¢
'84 - '85 = $1.00
'85 - '86 = 75¢
(D)

#6 $g(x) = 1$ from $x = -1$ to $x = 0$
$y = 1$ (B) $x = -0.5$

#7 $2^a \cdot 2^b \cdot 2^c = 2^{a+b+c} = 64 = 2^6$ so $a+b+c = 6$
so $2^a + 2^b + 2^c =$ all of pos and diff
$1+2+3=6$ is one possibility
$2^1+2^2+2^3 = 2+4+8 = 14$ (A)

#8



E

#9 $|h-10| < 50$

$-50 < h-10 < 50$

$-40 < h < 60$ x

$|h-20| < 40$

$-40 < h-20 < 40$

$-20 < h < 60$ x

over →

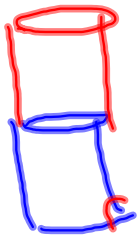
#9 cont.

(D) $|h-40| < 10$

$-10 < h-40 < 10$

$30 < h < 50$ ☺

#10 Duble height = double volume



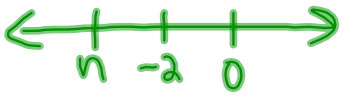
(B) $2V$

$\pi r^2 h = V$

$\pi r^2 2h = 2V$

#11 k is (n, r) true if $n < k < r$

-2 is $(n, 0)$ $n < -2 < 0$



I -3 ✓

II -1 x

III 3 x

(A)

#12) $.20x = .80y \Rightarrow \frac{.2x}{.8} = y \Rightarrow \frac{x}{4} = y$

$\frac{1}{4}x = .25x$

$= 25\%$ of x

(B)

#13 $x+y$ even

$(x+y)^2 + x+z$ odd

even odd

C

$2+3=5$
$2+4=6$

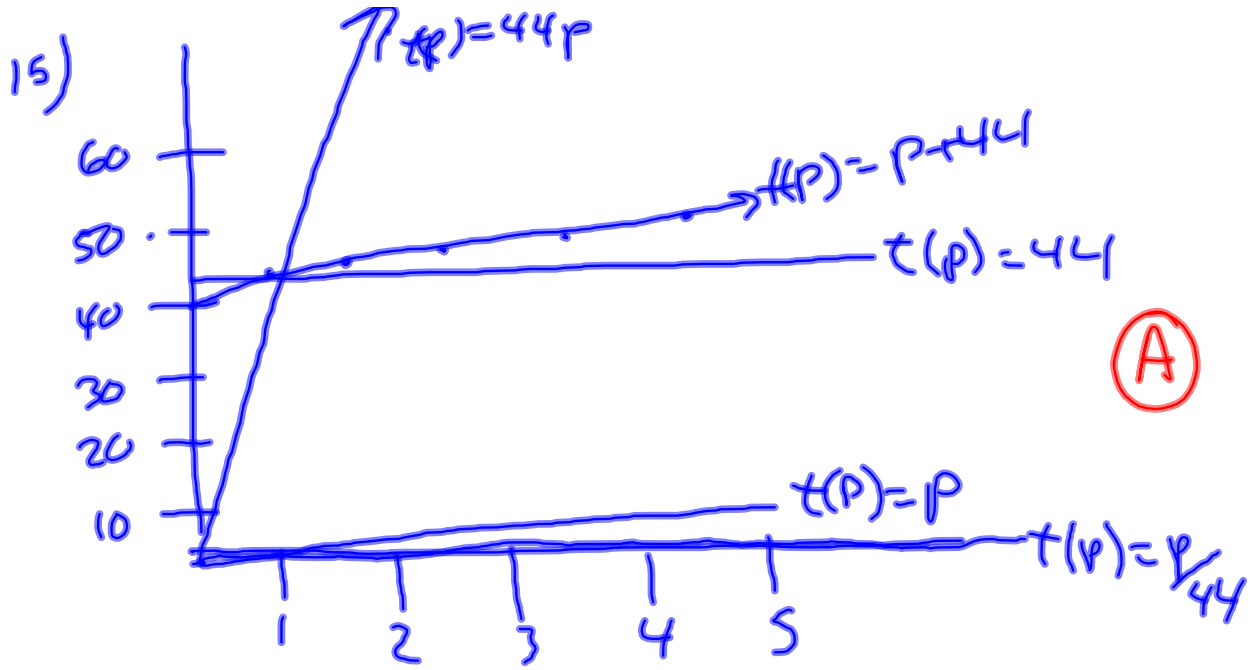
$x+z$ odd
$x+y$ even

14) $0 < x < 1$

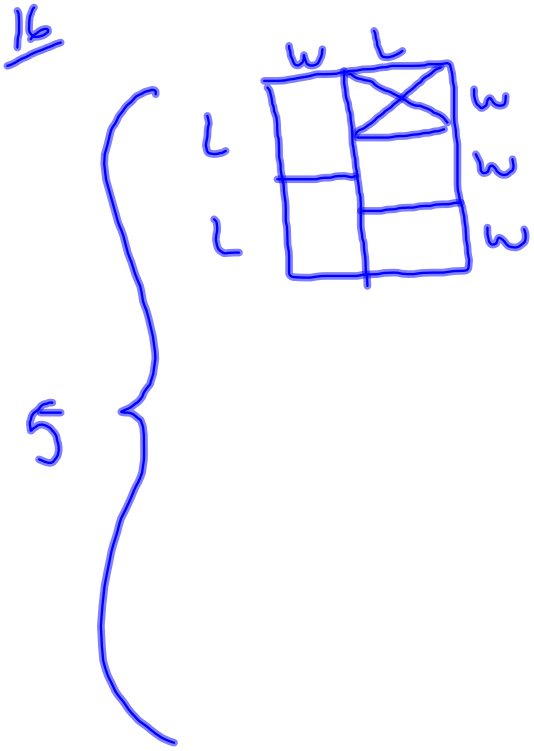
$x^2 > x^3$ ✓
$x > \frac{x}{2}$ ✓
$x > x^3$ ✓

E

15)



16



$12L \times 10L$

$3w = 2L$

$w = \frac{2}{3}L$

$12L = n\left(\frac{2}{3}L + L\right)$

$12 = \frac{2n}{3} + 1n$

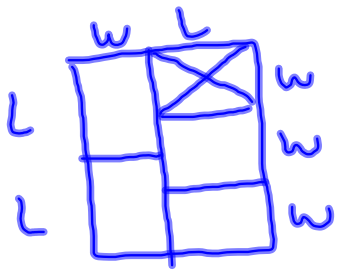
$36 = 2n + 3n$

$36 = 5n$

$\frac{12}{\frac{5}{3}}$

$12\frac{3}{5}$

16



6

12L x 10L

$3w = 2L$

$w = \frac{2}{3}L$

$10L = n\left(\frac{2}{3}L + L\right)$

$10 = \frac{2}{3}n + n$

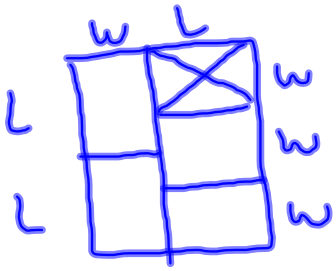
$30 = 2n + 3n$

$6 = n$ ☺

$\frac{10}{\frac{5}{3}}$

$10\frac{3}{5}$

6



$6 \times 6 = 36$ (trap)

$36 \times 5 = 180$

(E)