239/ Blue, yellow, red 2:3:1 🡪 yellow = 3/(2+3+1) = ½

* (1): 20 quarts of mixture; (2) 10 quarts of yellow

251/ Hiệu suất: Machinr R and S 🡪 R alone?

(1): S alone: tS = ¾ tR; (2): R & S together: 12’

265/ ***Is w + h4 pos? 🡪 (2): w is pos***

267/ p percent of its annual profits to certain fund = (p/100)\*k > 10,000?

268/ (\*) Area of obtuse triangle < 20? 🡪 E 🡪 1) x2 + y2 != z2; 2) x + y < 13

270/ (\*) Đặt x, y, z: x+z = 18 🡪 C

1. x+y+z = 30; 2) y+1+z = 23

275/ (\*\*) w + x + y + z = 50 🡪 C

1. Both: y = 4; 2) Nei: w = 14 🡪 **14 + x + 4 +z = 50 🡪 x + z = 50-14 = 32**

276/ (\*) x + y = 12,000; rX.x = rY.y 🡪 y? 🡪 A

1. rX = 3; rY = 6 🡪 3x = 6y 🡪 x = 2y

278/ **Is (x+1)/(y+1) > x/y? 🡪 A. 0<x<y**

281/ **If x and y are pos int, is (x+1)/(y+1) > x/y? 🡪 B. x<y**

284/ (\*) If x & y are post int, is xy even? 🡪 D

1. x2 + y2 - 1 is divisible by 4 (x2 + y2 = 4q + 1 divisible by 4, means x2 + y2 is odd)
2. x + y is odd

285/ If a & b are int, is a + b + 3 odd? 🡪 D

1. ab is odd int; 2) a – b even

288/ Chú ý less than 1/5 the amount (ko rõ ràng)

291/ Total attendance at perf / Total num of students = 4 🡪 Total attendance = 4\*200 = 800

* Avg num of students attending each perf = 800/8 = 100

293/ (\*) if n is int, GCD of 12 and n? 🡪 D

1. Product of 12 and n is 432
2. GCD of 24 & n is 12 (no number > 12 can a CD of 12 & n bcuz no number > 12 can be GCD of 12)

295/ (\*) if x is pos int > 1, x? 1) 2x is a common factor of 18 & 24 (2x = 6 🡪 x = 3)

296/ (\*) ***By what percent***…? 1) 25 percent greater than

297/ (\*\*) Rug diameter: 6ft, stains apart < 4 ft, stain radius < 1/10

302/ (\*) If r & t are 3-digit pos int, is r greater than t? \_\_C

1. Tens digit of r > each of 3 digits of t
2. Tens digits of r < either of the other 2 digits of r

305/ Nei = 0.3, Exact 1 = 0.3 🡪 P(2) + 0.3 + 0.5 = 1 🡪 P(2) = 0.2

311/ (\*) In the parallelogram, x? 🡪 D

1. y = 2x (***adjacent angels of a parallelogram are supplementary***, 180 = x + y = 3x)
2. x + z = 120 (***opposite angles of a parallelogram have the same measure***, 120 = x + z = 2x)

313/ Is x < 5? 🡪 2) x2 + x < 5 (Thế 5 vào)

* x < 5 – x2 but x2 >= 0 🡪 -x2 <= 0 🡪 5 – x2 <=5 🡪 x < 5

316/ (\*) D 🡪 1) 8/2n = 1/6; 2) n-3 = 21

318/ (\*) If xy != 0, is x3 + y3 > 0? 🡪 1) x + y > 0 as x2 – xy + y2 having ***xy <=0 🡪 -xy >=0***

319/ (\*\*) 624 = P(1 + r/100) < 602(1 + r/100) 🡪 1 + r/100 > 624/602 🡪 r/100 > 3/100 🡪 r > 3

320/ Sum of certain pair of conse odd int? 🡪 C

1. At least 1 of ints is neg; 2) At least 1 of ints is pos 🡪 -1 & 1 🡪 sum = 0

322/ (\*\*) C: 1) x > 1000 & x < 0.2Tx 🡪 1000 < 0.2Tx 🡪 Tx > 5,000

1. y < 1,000 & y > 0.2Ty 🡪 0.2Ty < 1,000 🡪 Ty < 5,000

* Ty < 5,000, Tx

323/ (\*) C: 1) ***If***, during …

329/ Sum of 3 dice nums up is 12. Is at leats 1 of these nums 5?

{1,5,6}, {2,4,6}, {2,5,5}, {3,3,6}, {3,4,5} 🡪 C {2,5,5}

1. None divisible by 3: {4,4,4} or {2,5,5}
2. 2 but not all 3 are equal: {3,3,6}, {2,5,5}

330/ (\*\*) Point R has coord r and point T has coor t. is t < 0? 🡪 C

1. -1<r<0; 2) Distance btw R and T is equal to r2

331/ (\*) C: 5C3 = 10

1. Num of distinct points in S is 5
2. No 3 of points in S are collinear (thẳng hàng)

336/ Sum of prices of 3 shirts exceed $60? – B: price of the least expensive of shirts > $20

337/ (\*) Total num of coints that B & C have? == C

1. B has 50% more coins than C (B = 1.5C 🡪 B + C = 2.5C)
2. 21 < B + C < 25

* 21 < 2.5C < 28 🡪 8.4 < C < 11.2 🡪 Tìm số nguyên

340/ Given rev accounts 6% of $840 in 2000. What was revenue in 1998? 🡪 B

1. The revenue increase by 40% from 1998 to 2000.

341/ (\*) x miles/h for 2h \* y miles/h for 3 hrs. Avg speed?

Traveled (2x + 3y) miles in 2+3 = 5 hrs for an avg spped ((2x+3y)/5) miles/h

🡪 ((2x+3y)/5) = ?

* A. 2x+3y = 280 🡪 ((2x+3y)/5) = 280/5

343/ (\*\*\*\*) Hình trụ nằm ngang có lượng nước nửa tank (V = pi.R2.6)

Tank filled depth = 2ft, resting horizontally on its side, inside 6 ft long . Volume=? 🡪 D

1. 4 ft diameter
2. Rectangle area 24 sqft

351/ (\*\*) Fixed paid $300, + commis 5% for > $1,000.

Total paid P = 300 + 0.05(S – 1,000) = ? 🡪 D

1. The total paid = 10% sales amount (P = 0.1S)
2. Sales S = $5,000

353/ (\*\*) Area ABC vuông = Area DBA vuông? 🡪 C

1. AC2 = 2AD2 (🡪 value căn 2 & 1 🡪 AB = 2)
2. ABC vuông is isosceles (cân) (🡪 value căn 2 & căn 2)

354/ (\*\*\*) r & s pos ints, r/s expressed as decimal with only a finite num of non zero digits? 🡪 A. s is a factor of 100 (r\*0.5, r\*0.25, …)

357/ (\*\*) If x pos int, x prime? 🡪 E

1. 3x + 1 prime; 2) 5x + 1 prime

361/ (\*\*) a,b,c,d pos ints, a/b < c/d?

1. ***(ad/bc)2 < ad/bc 🡪 ad/bc < 1*** 🡪 a/b < c/d

363/ (\*) p,q,r,s,t 5 conse even ints. Avg of them? 🡪 D

1. Q + s = 24
2. ***Avg of q & r is 11 🡪 (q+r)/2 = 11 🡪 q+r = 22***

365/ (\*\*) If x & y ints, x>y ? 🡪 C : x pos, y neg

1. x+y > 0 🡪 x pos or neg
2. yx < 0 🡪 y < 0

366/ ***if r & s roots of x2 + bx + c = 0, b & c constants, is rs < 0 ?***

* ***2) c < 0***

370/ (\*) if x neg, is x < -3?

* 1) x2 > 9

372/ (\*\*) values = 1,2,3. r = ? 🡪 D

1. V + z = 6
2. (2) s + t + u + x = 6

373/ (\*\*) x+y = 10, x>y 🡪 x > 10-x or x > 5

* B. 3x + 5y < 40 🡪 3x + 5(10-x) < 40 🡪 x>5

375/ (\*) T, J, S purchased house. Avg price = $120,000. Median=?

B. Price of J’shouse = $120,000

376/ (\*\*) value of x if x3 < x2? 🡪 x3 – x2 < 0 🡪 x2(x-1) <0; x != 0 🡪 x-1 < 0 🡪 x < 1

B. x is an int > -2 🡪 x = -1

378/ (\*\*) Upper: greatest pages: 400. Lower: least: 475 pgs. Mean? 🡪 C

1): Upper: 25 books; 2) Lower: 24 books 🡪 25th ordered book: 400 pgs

381/ (\*) 3 different nums. Median = Avg? 🡪 D

1. Range = 2\*(greatest – median)
2. Sum = 3\*(one of the nums)

382/ (\*\*) Line l in xy plane \* not pass through origin. Slope of line l? y = mx+b, b!= 0 🡪 m=?

1. X-intercept of lin l is twice the y intercept of line l.

A vertical line not passing through origin will not have a y-intercept 🡪 0 = mx + b 🡪 x = -b/m 🡪 -b/m = 2b 🡪 m = -1/2

385/ (\*) range of set S is x. Range of set T is y. all nums of T in S, x > y? 🡪 E

1. Set S 7 nums; 2) Set T 6 nums (range maybe trùng 1 & 7)

386/ (\*\*) hypotenuse of right triangle = 10. Perimeter of it? 🡪 D

x2 + y2 = 100 🡪 x+y+10? Or x+y?

1. Area = 25 sqft 🡪1/2 xy = 25 🡪 xy=50. (x+y)2 = 100 +2\*50 🡪 x+y = căn 200
2. 2 legs of triangle equal 🡪 2x2 = 100 🡪 x= căn 50

387/ (\*\*\*) 1st truck > ½ total, S3 on 1st truck? Multiply each value by 60. 🡪 1st truck > ½\*60 = 30

B. S1 & S6 on 2nd truck 🡪 15 + 6 + 10(S3) = 31🡪 S3 must be on 1st truck

388/ (\*\*) x,y,z 3 digit pos ints, x=y+z, hundreds digit of x = sum hundreds digit of y & z?

1. Tens digit of x = sum Tens digit of y & z

a/ 123 + 234 = 357; b/ 153 + 147 = 300

389/ (\*\*) 100 voters, x: num of voters Favorable for both ?

Fav to at least 1 candidate: 40 + 30 – x = 70 – x

1. Fav ***at least 1 candidate (either candidate)***: 100 - 40 = 60 🡪 70-x = 60

390/ (\*\*\*) n students to one of m classrooms. If 3<m<13<n, each room has same num of students? (n is divisible by m?)

1. 13n divisible by m 🡪 13n = qm or n/m = q/13

13 prime, 13 doesn’t div m (bcuz m <13) 🡪 13 div q 🡪 q/13 int 🡪 n/m int 🡪 n divisible by m

391/ (\*\*\*) q,s,t diff nums, q<s<t?

1. t-q = |t-s| + |s-q|

392/ (\*) median num of staffs? 🡪 C

1. 25% have 4 or more staffs
2. 35% have 2 or fewer staffs

* 100 – (25 + 35) = 40% of projects have exactly 3 staffs 🡪 med = 3

393/ (\*\*) Rev – Cost = R – ($100,000 \_ 0.05R) = 0.95R - $100,000 must be pos > 0

B: 0.95($5x) - $100,000 > 0 🡪 x > 21,052

394/ (\*) Begin in Jan, made deposits $120 on 15th of each month for several conse months & then withdraw $50 on the 15th of remaining months. No other transactions. Closing balance May was $2,600. Range of monthly closing balance? 🡪 C

1. Closing balance for April < $2,625
2. Closing balance for June < $2,675

(Bắt đầu từ giữa tháng 6 mới rút $50 mỗi tháng 🡪 Tính đc original in Jan và last balance of Dec)

395/ All nums in a list of 15 nums equal?

* B. Sum of any 3 nums in the list = 12

396/ (\*\*) 396/ (\*) Avg of 5 nums = 75, how many nums = 75? 🡪 D

1. None < 75; 2) None > 75 🡪 All = 75

399/ (\*\*) n pos int, k = 5.1 \* 10n, k = ? 🡪 D 🡪 n = 4 🡪 k = 51,000

1. 6,000 < k < 500,000
2. k2 = 2.601 \* 109 (tính ***căn 2,601 = 51***)

402/ (\*) p directly proportional to e, which is in turn directly proportional to i. What is p of i = 70? (p = ex and e = iy (for some constants x and y), so p = ixy 🡪 p = 70xy = ? 🡪 xy = ?

1. P = 2.0 whenever I = 50 🡪 p/I = 2.0/50 🡪 p/70 = 2/50

(2) p = 2.0 whenever i = 50 🡪 2 = 50xy 🡪 xy = 2/50