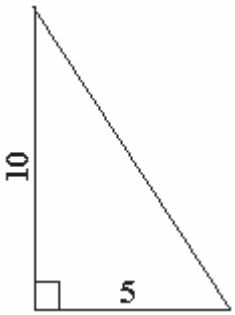
Stage I Question Set 14

1) 20 questions
2) Completion time 30 to 40 minutes
3) Calculators are permitted
4) No penalty for incorrect answers
5) Diagrams are not drawn to scale



QUESTION #1
Find the area of the triangle.

a) 50 b) 25 c) $25\sqrt{2}$ d) 100 e) none of the above

QUESTION #2

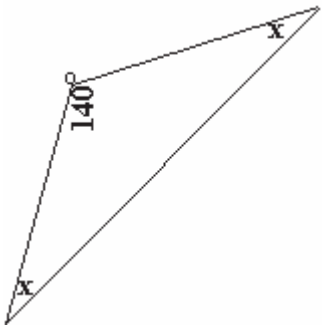
Evaluate $\dfrac{5.5}{\frac{1}{3}}$

a) 15.5 b) 6/11 c) 11/6 d) 16.5 e) none of the above

QUESTION #3 u + v = 6. u = -27. Find the value of v.
a) v = -33 b) v = 33 c) v = 21 d) v = -21 e) none of the above

QUESTION #4 A circle has an area of 108π. What is its diameter?

a) $3\sqrt{2}$ b) $9\sqrt{2}$ c) $6\sqrt{3}$ d) $12\sqrt{3}$ e) none of the above

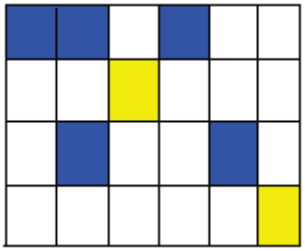


QUESTION #5 Find the value of x in degrees.
a) 15 b) 25 c) 30 d) 40 e) none of the above **QUESTION #6 Half of Q is 78. What is 3/5 of Q?**

a) 93.6 b) 197.2 c) 62.4 d) 130 e) none of the above

QUESTION #7 If a laser printer has to be serviced after printing 15,000 sheets, how many times will the printer have been serviced by the time it has printed 78,000 sheets?
a) 6 b) 4 c) 5 d) 7 e) none of the above
QUESTION #8 Bill has a math test every two weeks, each of which is worth the same amount. He averaged 85% on his first three tests. If he gets 90% and 95% on his next two tests, what will be his average for the five tests?

a) 90% b) 88% c) 89% d) 92.5% e) none of the above



QUESTION #9 A certain number of squares are to be shaded red so that a total of one half of the squares are coloured blue, yellow or red. How many squares will be shaded red?

a) 12 b) 13 c) 5 d) 4 e) none of the above

QUESTION #10 A particular type of metal alloy has a mass of 32 grams per cubic centimeter of volume. How many cubic centimeters does 1008 kg of this metal alloy occupy?
a) 31.5 cm^3 b) 32,256 cm^3 c) 63,000 cm^3 d) 31,500 cm^3 e) none of the above

QUESTION #11 A parking meter attendant walks by and checks a particular parking meter every 22 minutes. If the attendant first checked the meter at 9:22 a.m., how many times in total will the attendant have checked the meter by 3 p.m.?

a) 22 b) 17 c) 15 d) 16 e) none of the above

QUESTION #12 A Choclo candy bar has 48g of candy bar and 2g of wrapping. A certain quantity are shipped in a cardboard box. If the box, with the candy bars, weighs 10 kg, and the box by itself weighs 500 g, how many candy bars are in the box?

a) 190 b) 200 c) 180 d) 220 e) none of the above

QUESTION #13Find the lowest common multiple of 102, 207 and 308.
a) 11,781 b) 23,562 c) 1,083,852 d) 70,686 e) none of the above

QUESTION #14 Daniel's car depreciates in value at a rate of 20% per year. If it's currently worth $9,200, how much will it be worth in one year?
a) $7400 b) $8,280 c) $11,040 d) $7,360 e) none of the above

QUESTION #15 Larry liked to play the stock market. His holdings were 100 shares of UV Inc. (a sunscreen company) and 200 shares of WB Inc. (a web-browser company). At the beginning of a given week, each UV share was worth $25 and each WB share was worth $30. The UV shares decreased in value by $5 each by the end of the week, and the WB shares increased in value by $10. What was Larry's net gain or loss in respect to his shares?

a) $500 loss b) $1500 gain c) $1000 gain d) $1000 loss e) none of the above

QUESTION #16 Michael wanted to put $1000 in a savings account. Bank P paid annual interest of 8%, charged $2 per month in service charges, and charged $10 setup fees. Bank Q paid annual interest of 5%, but charged no service fees or setup fees. Bank R paid annual interest of 7%, but charged $1 per month in service charges and $20 in setup fees. Bank S paid annual interest of 6%, with a $50 setup fee and no other service charges. Which bank would result in Michael having the maximum amount of money after 1 year?

a) Bank P b) Bank Q c) Bank R d) Bank S e) Two or more banks would provide an equal maximum.

QUESTION #17 Three circular cylinders are stacked one inside the other. The smallest cylinder has radius 1. The middle cylinder has radius 2, and the largest cylinder has radius 3. The height of all the cylinders is 10. (All units are in centimeters). How many cubic centimeters of volume is there between the outer cylinder and the middle cylinder plus inside the smallest cylinder? The volume of a cylinder is R^2H.

a) 10π b) 45π c) 40π d) 50π e) none of the above

QUESTION #18 An open concrete trough has a rectangular base with dimensions of 10m x 2m, and is 2m high. The concrete is 10 cm thick. How much is the usable volume of this trough in m^3 to one decimal place?

a) 33.5 b) 40 c) 31.8 d) 36 e) none of the above

QUESTION #19 For his 3 morning classes, Winston has to choose from one of biology, chemistry or physics. He has to choose from one of woodworking or auto shop. He has to take English. How many different combinations are possible for Winston?
a) 9 b) 6 c) 4 d) 3 e) none of the above

QUESTION #20 The triangle has an area of 225. O is the centre of the circle. Find the circumference of the circle.

a) 225π b) 15π c) 22.5π d) You cannnot determine it from the given information. e) none of the above