##### C:\Users\User\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.Word\ADEC-LOGO-AI-Format---For-Designers.jpgمجلس أبو ظبي للتعليمAbu Dhabi Education council

مدرسة عائشة بنت ابي بكر Aishah Bint Abi Baker Girls' School

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| **1.**  Two sides of a triangle measure 10 inches and 6 inches. Which of the following choices for the length of the third side will make the triangle a right triangle? |
|        [1]  4 inches             [2]  7 inches             [3]  8 inches         [4]  9 inches |
| **2.**  The side of a square measures 6 cm. What is the exact length of the diagonal of the square? |
|      [1]  tm1cm.             [2]  tm2cm.           [3]  tm3cm.         [4] tm4 cm. |
|  **3.** The length of the hypotenuse of a right triangle is 32 inches and the length of one of the legs is 18 inches. What is the length, to the *nearest tenth* of an inch, of the other leg of the triangle?  |
|      [1]  36.7 inches         [2]  28.4 inches         [3]  26.5 inches    [4]  25.4 inches |
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| **4.**  A light post, shown at the right, is set in concrete and supported with a guy wire while the concrete dries. The length of the guy wire is 10 feet and the ground stake is 4 feet from the bottom of the light post. Which equation could be used to find the height of the light post, *x*, from the ground to the top of the light post?  [1] p1[2] p2[3] p3[4] p4 | post2 |

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| **5.** In the diagram at the right, *MH* = 15, *HT* = 13, and *AT* = 5. Find *MA.*[1]  8[2]  9[3]  12  [4]  14  | tridouble |

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| **6.** In triangle *MAP*, the measure of angle *P* is 90º, *MA* = 68, *MP* = 32 and *PA* = 60. Which ratio represents the cosine of <*A*? |
|      [1]  60/68                  [2]  32/68                 [3]  32/60             [4]  60/32 |
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| **7.** In the diagram shown at the right, what is the value of *x* to the *nearest whole number*?[1]  8[2]  9[3]  10[4]  13  | triblue |

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|  **8.** In right triangle *PQR*, *PR* = 26, *PQ* = 10, *QR* = 24, and *m<Q* = 90. Find, to the *nearest degree*, the measure of angle *P*. |
|      [1]  22                    [2] 68                      [3] 23                       [4] 67 |
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| **9.** Which of the following equations can be used to find the value of *x* in the diagram at the right? [1] m9                 [2] m10[3]  m11               [4]  All choices can be used. | tri blue2 |

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|  **10.**  The choices below contain the lengths of the sides of four separate triangles. Which of the choices is **NOT** a right triangle? |
|      [1]  12, 16, 20                       [2]  15, 36, 39       [3]  20, 24, 26                       [4]  30, 40, 50 |
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| **11.** A light post, shown at the right, is set in concrete and supported with a guy wire while the concrete dries. Find, to the *nearest degree*, the angle of elevation of the top of the post made by the guy wire from the stake in the ground.[1] 66º[2] 24º[3] 22º[4] 64º | angle post |

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| **12.** From a point, *G*, on the ground, the angle of elevation of an airplane is 21º. The altitude of the plane is 2200 meters. What is the distance from point *G* to the airplane, to the nearest tenth of a meter?[1] 2356.5 meters[2] 3241.4 meters[3] 5731.2 meters[4] 6138.9 meters | plane |

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| **13.** Find to the *nearest degree*, the number of degrees in the angle labeled theta, in the diagram at the right. (*Hint: this is a two step problem. Use the small triangle on the left to help find needed information.*)[1]  32º[2]  44º[3]  48º[4]  52º   | trig challenge |

**14.** If the legs of a right triangle are 28 units and 45 units, find the exact number of units in the  hypotenuse. |
|      [1]  48                    [2]  51                  [3]  53                  [4]  67 |
|  **15.** The hypotenuse of a right triangle has a length radical 10. If one of the legs is radical 3, find the exact value of the other leg. |
|      [1]   radical 7                  [2] radical 6                 [3] radical 13              [4] 2 radical 3  |
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| **16.**  Find the area of the right triangle shown at the right.[1]  56 square units[2]  84 square units [3]  168 square units[4]  175 square units | area pic |

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| **17.**  Right triangle *ABC* is shown at the right. Find the value of cos(*B*) to the *nearest tenth*. (*Hint: find the hypotenuse first.*)[1]  0.6                      [2]  1.3  [3]  0.8                      [4]  1.7 | purple |

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|  **18.** The legs of an isosceles right triangle each measure 4 units. Find the exact length of the hypotenuse. |
|      [1]  4 radical 2                    [2] 4 radical 3               [3]  2 radical 3               [4]  2 radical 2 |
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| **19.** A right triangle is shown at the right. Find the value of *x*.  [1]  4[2]  6[3]  8[4]  9 | using x |

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| **20.**  A plane has traveled 24 miles on a course heading 52º east of north. How far north (*x*) has the plane traveled at this point? Express answer to the *nearest hundredth* of a mile.[1]  12.94 miles[2]  14.78 miles[3]  18.91 miles[4]  21.72 miles | trig direction |

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