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| Year  8 | Mathematics Practice Test –  Number Plane and Linear Relations | **Calculator Practice Test** |
|  | Name |  |

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| 1. | The points *A* and *B* are described by the ordered pairs  *A* (2, -3) and *B* (-3, 2) *A* (-3, 2) and *B* (2, -3)  *A* (-3, 2) and *B* (-3, 2) *A* (3, 2) and *B* (2, 3) |
| 2. | Write down the ordered pairs that describe the position of the points *C* and *D.*  ( , )  ( , )  *C D* |
| 3. | Which statement is true of the number plane below?  *O* is the origin and *P* lies in the 2nd quadrant.  *P* is the origin and *O* lies in the 3rd quadrant.  *O* is the origin and *P* lies in the 3rd quadrant.  *O* is the origin and *P* lies in the 1st quadrant. |
| 4. | Mark and label the points T (3, 4) and  S (-4, -1) on the number plane. |
| 5. | Mark and label the points P (-4, 6) and  Q (6, -7) on the number plane. |
| 6. | Write down the ordered pairs that describe the position of the points *E* and *F.*  ( , )  ( , )  *E F* |
| 7. | The equation is used to produce the table of ordered pairs below.  Graph the ordered pairs on the number plane.   |  |  |  |  | | --- | --- | --- | --- | |  | -2 | 2 | 6 | |  | -3 | -1 | 1 | |
| 8. | Use the equation  to complete the table of ordered pairs.   |  |  |  |  | | --- | --- | --- | --- | |  | -1 | 0 | 2 | |  |  |  |  | |
|  | ***Question 9 – 12 refer to the information below.***  Sharon starts to collect old vinyl records. She buys the same number of records each week from a local market. The graph below shows the number of vinyl records in her collection in weeks 1 to 4. |
| 9. | How many records did Sharon have in *Week 3*?  7 8 9 10 |
| 10. | How many records would she have in *Week 7*, if she maintains this pattern of collecting?  records. |
| 11. | On the graph mark the number of records Sharon would have in *Week 5* and *Week 6* if she maintains this pattern of collecting. |
| 12. | Describe in words the relations ship between the Week number and the number of records collected.  The number of records = × *Week* *Number* |
|  | ***Questions 13 – 16 refer to the information below.***  Zak has some comic books in his bookshelf. He decides to take the same number of comic books to the local market each week and sell them for pocket money. The graph below shows the number of comics on his shelf from Week 0 (before he sold any comics) up to *Week* 3. |
| 13. | How many comics did Zak have on his bookshelf before he started selling them?    comics. |
| 14. | In which week were there 27 comics on his shelf?  *Week* |
| 15. | On the graph, mark the number of comics that would be left on Zak’s bookshelf in *Week 6, Week 7* and *Week 8*, if he maintains this pattern of selling his comics? |
| 16. | Complete the statement below to describe the relationship between the Week number and the number of comics on Zaks shelf.  The number of comics = ─ *× Week Number*. |
|  | ***Questions 17 – 19 refer to the graph below***.  The graph shows the line represented by the equation . |
| 17. | Which point does **not** lie on the line ?  (0, -3) ((2, 1) (0, 1 ½) (1, -1) |
| 18. | What is the value of *x* when *y* = 2 for the equation ?    *x* = |
| 19. | Which equation describes the ordered pairs in the table below?     |  |  |  |  | | --- | --- | --- | --- | |  | 1 | 2 | 3 | |  | 1 | 3 | 5 | |
|  | ***Questions 20 – 22 refer to the graph below***.  The graph shows the line represented by an equation. |
| 20. | Complete the table below for the line shown.     |  |  |  |  | | --- | --- | --- | --- | |  | 1 | 2 | 3 | |  |  |  |  | |
| 21. | Which equation describes the line shown? |
| 22. | Which ordered pair does not lie on the line shown?  (9, 0) (-1, 12) (0, 9) (4, -3) |

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|  | ***Questions 23 – 25 relate to the equation*** ***.*** |
| 23. | Complete the table below for the equation  .   |  |  |  |  | | --- | --- | --- | --- | |  | 0 | 1 | 3 | |  |  |  |  | |
| 24. | Draw the line represented by  on the graph below. |
| 25. | The line  is also shown on the graph, what is it’s point of intersection with the line  ?  ( , ) |

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|  | Questions 26 – 30 refer to the graph below, which shows the temperature in a freezer (called Freezer 1) after it is turned on. |
| 26. | Complete the three values in the table below.     |  |  |  |  | | --- | --- | --- | --- | | Time | 2 | 4 | 6 | | Temperature |  |  |  | |
| 27. | What was the temperature of the freezer, when it was turned on?  oC |
| 28. | When did the temperature reach freezing point (0o C)  After minutes. |
| 29. | A second freezer (Freezer 2) was at 15o C when it was turned on, and cooled by three degrees each minute. Complete the table below for Freezer 2.   |  |  |  |  | | --- | --- | --- | --- | | Time | 2 | 4 | 6 | | Temperature |  |  |  | |
| 30. | Plot the line for Freezer 2 on the graph above  . |