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| GRADE 9 | | | | |
|  | | | | |
| INVESTIGATION | | | | |
| ANGLES PAIRS ON PARALLEL LINES | | | | |
|  |  |  | |  |
| 1.1 | In the following five diagrams, and are two lines. The other labels refer to angles. In each diagram measure the angles marked and answer the related questions in the table below. | | |  |
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| |  |  |  | | --- | --- | --- | | a. | b. | c. | | d. | e. |  | | | | | |
|  |  |  | | **[20]** |
| 1.2 | Complete the table. | | |  |
|  | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | Diagram | Are the lines  and parallel? | Are the corresponding angles and equal? | Are the alternate angles and equal? | Are the co-interior angles and equal? If not, are they supplementary? | | | Equal | Supplementary | | a |  |  |  |  |  | | b |  |  |  |  |  | | c |  |  |  |  |  | | d |  |  |  |  |  | | e |  |  |  |  |  | | | |  |
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|  | **[20]** |
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| 1.3 | From the investigation you should have discovered some important facts about special angles pairs. | | |  |
|  | |  |  |  | | --- | --- | --- | | When **parallel lines** are cut by a **transversal:** | | | | 1.3.1 | Corresponding angles |  | | 1.3.2 | Alternate angles |  | | 1.3.3 | Co-interior angles |  | | 1.3.4 | Vertically opposite angles |  | | | |  |
|  |  |
|  | (1) |
|  | (1) |
|  | (2) |
|  | (1) |
|  |  |
|  |  |  | | **[5]** |
|  |  |  | |  |
| 1.4 | The following figures are not drawn to scale. Does each figure contain a pair of parallel lines? Give a brief reason for each answer. | | |  |
|  |  |  |  |  |
| 1.4.1 |  | 1.4.2 |  |  |
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|  | (1) | (1) |
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| 1.4.3 | |  | | --- | |  | |  | | 1.4.4 | |  | | --- | |  | |  | |  |
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|  |  |  |
|  | (1) | (1) |
|  |  |  |
|  |  | **[4]** |
| 1.5 | Find the value of the unknown, giving a brief reason for your answer: | | |  |
|  |  |  |  |  |
| 1.5.1 | |  |  | | --- | --- | | Statement | Reason | |  |  | | 1.5.2 | |  |  | | --- | --- | | Statement | Reason | |  |  | |  |
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|  | (2) | (2) |
|  |  |  |
| 1.5.3 | |  |  | | --- | --- | | Statement | Reason | |  |  | |  |  | | 1.5.4 | |  |  | | --- | --- | | Statement | Reason | |  |  | |  |  | |  |
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|  | (4) | (3) |
|  |  |  | **[11]** |
|  |  |  |  |  |
|  |  |  | **TOTAL:** | **60** |