Stopping Distance Questions for GCSE Physics

1. State the two parts that make up the stopping distance of a vehicle.

2. What is meant by *thinking distance*?

3. What is meant by *braking distance*?

4. At what points does the thinking distance begin and end?

5. Write the equation that links thinking distance, speed and reaction time.

6. State **two factors** that can increase a driver's reaction time.

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7. Explain why poor visibility (e.g. fog) does **not directly** increase thinking distance.

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8. A driver is using a mobile phone while driving. Explain how this affects the thinking distance.

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9. A car travels at **13 m/s** (30mph). The driver's reaction time is **0.5 s**. Calculate the thinking distance.

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10. A car is travelling at **22 m/s** (50mph) and the driver has a reaction time of **0.7 s**. Calculate the thinking distance.

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11. A driver reacts in **0.4 s**. Calculate the thinking distance when the car is travelling at **15 m/s**.

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12. State **three factors** that can increase braking distance.

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13. Explain why worn tyres increase the braking distance of a car.

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14. At speeds above **20 mph**, which part of the stopping distance is usually greater — thinking distance or braking distance?

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15. A car doubles its speed. State what happens to: a) the thinking distance, b) the braking distance.

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