



REVISION QUESTIONS

FORM 1 to 2
2010-2011

- 1.
- (a) What is a prime number? List the first 10 prime numbers.
 - (b) Write down all the multiples of 12 up to 70.
 - (c) Write down all the factors of 24.
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2. Express the following numbers in prime factors and then find the HCF and the LCM: 40, 120, 320
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3. Evaluate the following:

- (a) $12 \cdot 2 \div 3 - 3 + 6 =$
 - (b) $-10 + 4(-6 + 2) - 5(-1 - 7 + 3) - (-5) =$
 - (c) $3 \cdot (-8 + 2 - 1) - (-5 - 4 + 2 + 3)^2 =$
 - (d) $(-3 - 1 + 5 - 2)^3 - (4 - 2 - 6 - 2)^2 =$
 - (e) $(-3 + 5)^0 + (5 - 7)^2 - (3 - 6)^3 =$
 - (f) $13.84 \div 1.6 + 3.2 \times 1.4 =$
 - (g) $(1.9 - 3.83)^2 - 4.8 \cdot 1.3 =$
 - (h) $\frac{8}{9} \div \left(1\frac{2}{3} - \frac{1}{2}\right) =$
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4. Write the following numbers correct to:

- (a) $23.345 =$ (2 decimal places)
(b) $155.567 =$ (4 significant figures)
(c) $123.52 =$ (nearest whole number)
(d) $3.999 =$ (2 decimal places)
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5. Write the following in index form:

- (a) $x \cdot x \cdot x \cdot x \cdot x =$
(b) $y \cdot y + w \cdot w \cdot w =$
(c) $2 \cdot a \cdot a \cdot 2 + b \cdot b \cdot b \cdot 3 =$
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6. Simplify the following:

- (a) $3(2x - 5) + 10 =$
(b) $2(x - 2) - (1 - x) - 2(3x - 7) =$
(c) $x^2(x + 2y - 1) - x(x + 4xy - 2x) =$
(d) $\frac{1}{3}(15x + 9y - 12) =$
(e) $3a^2b^2 - 2a^2 + 4a^2b - 2a^2b^2 - a^2 + 2ab^2 =$
(f) $2x(-3x + xy) - 3y(5x^2 - 1) + 8x(-x + 3) =$
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7. Simplify the following algebraic fractions:

- (a) $\frac{x}{xy} - \frac{x+y}{9x} + \frac{y+2}{6y} =$
(b) $\left(-\frac{2d^2}{3e}\right) \div \left(\frac{2d^3}{9e}\right) =$
(c) $\frac{2}{5}(x + 2y - 3) - \frac{1}{10}(4x - y + 1) =$
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8. Solve the following equations.

(a) $4(x - 3) - 2(3x - 12) = 42$

(b) $2(3 - 6x) = 2(2 - 4x)$

(c) $\frac{2}{p+3} = \frac{9}{10}$

(d) $\frac{2}{5}(k - 3) - \frac{k+2}{4} = -\frac{1}{2}$

(e) $\frac{3(x-2)}{4} - \frac{x+1}{6} = x$

(f) $\frac{1}{5x^2} - \frac{4}{2x} + \frac{1}{x^2} = \frac{2}{5x}$

(g) $2 = \frac{\sqrt{2x}}{2} + 1$

(h) $3x^2 + 5 = 32$

9. If $x = 2$, $y = 3$ and $z = -1$, find the value of:

$$A = \frac{x^3 - xy}{z(x + y)}$$

10. (a) Find 25% of \$400,

(b) Decrease €150 by 10%,

(c) Increase 340 by 45% and decrease the result by 20%.

11. A man buys a TV set for €500 and sells it for €640. What is the percentage profit?

12. A shopkeeper sells a carpet for €72 and gains 20%. What did it cost him?

13. A sum of money is split between two people in the ratio 2:3. If the smaller amount is \$100, what is the value of the larger amount and the total sum of money altogether?

14. The map ratio of a map is 1 : 2000000. Find the distance on the map, in centimeters, which represents an actual distance of 36 km.

15. Six Hong Kong dollars can be exchanged for 80 Japanese yen. How many dollars can be exchanged for 200 yen?

16. The simple interest on €750 invested for 9 months is €45. What is the rate percentage per annum?

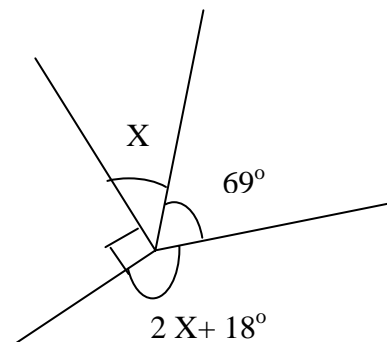
17. Rob invested € 2500 in a building society account at 2% per year compound interest. Calculate the total amount in the account after three years.

18. Maria is 32 years older than George. Ten years ago she was three times as old as George was then. Find the present age of each.

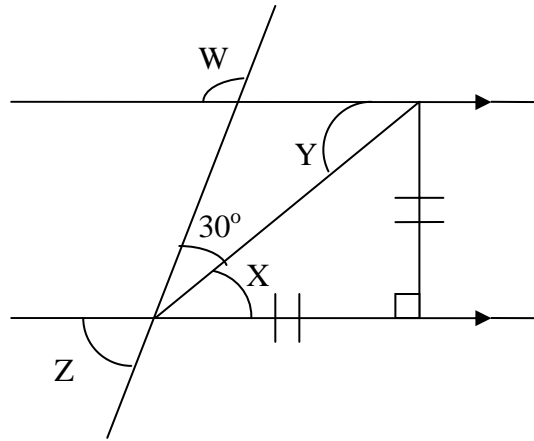
19. When \$143 is divided in the ratio 2:4:5, what is the difference between the largest share and the smallest share?

20. Find the size of the angles marked with letters, giving reasons for your answers.

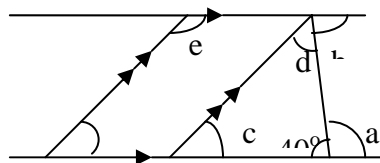
(a)



(b)



(c)



21. Complete the following:

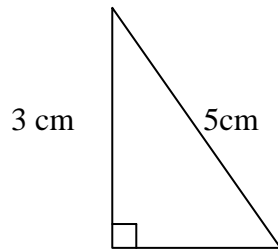
(a) $1200000m = \underline{\hspace{2cm}} Km$

(b) $802.15cm = \underline{\hspace{2cm}} mm$

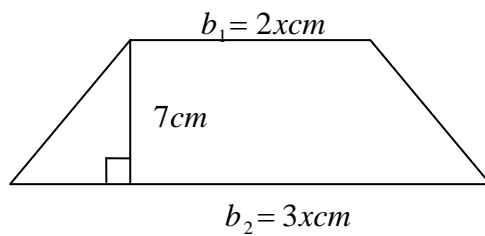
(c) $300000mm^2 = \underline{\hspace{2cm}} cm^2$

(d) $493cm^2 = \underline{\hspace{2cm}} m^2$

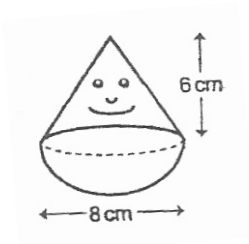
22. Find the area of the triangle.



23. Find the value of x if the area of the trapezium is 70cm^2 .



24. A toy consists of a solid hemisphere with a cone at the top. Find the volume of the toy, giving your answer as a fraction in terms of π .



25. These are the marks gained in a mathematics test by a group of pupils.

10, 12, 3, 12, 15, 8, 9, 12, 14, 13, 5, 11, 12, 10, 11, 7, 9, 12, 13, 8

Find:

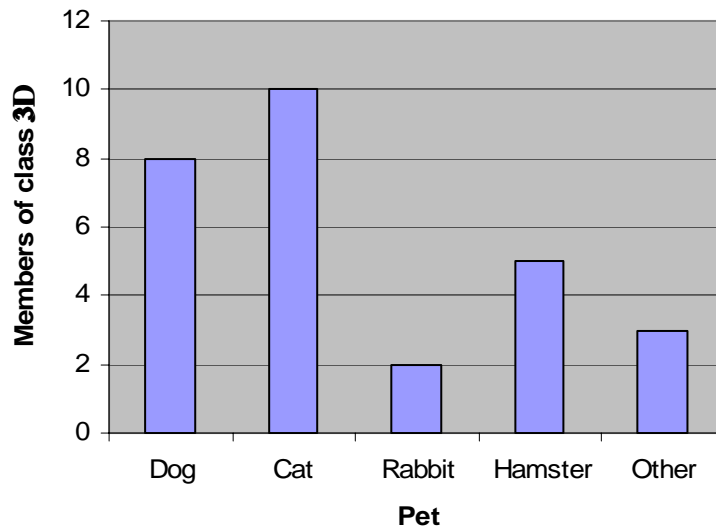
- (a) the mean mark,
 - (b) the mode,
 - (c) the range of these marks,
 - (d) the median mark.
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26. Convert the following recurring decimals into fractions.

(a) $0.5\dot{3}$

(b) $0.\dot{3}$

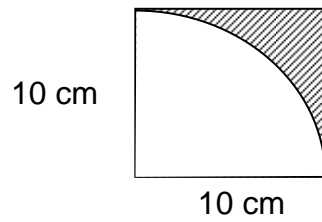
27.



Use the bar chart to answer the following questions.

- (a) What is the most popular pet?
 - (b) How many children have a dog as a pet?
 - (c) What is the total number of pets owned by members of class 3D?
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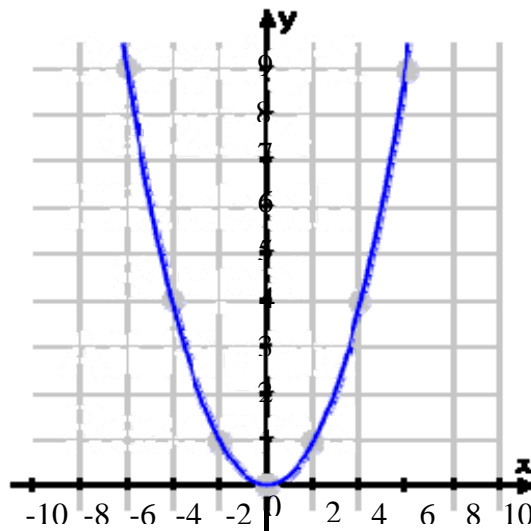
28. Find the area of the shaded region. Use $\pi = 3.14$. Give your answer to 1 decimal place.



29. A box contains 25 coloured balls, where seven are red, ten balls are blue and eight balls are yellow. A ball is selected from the box at random. Calculate the probability of selecting:

- (a) a red ball,
- (b) a blue ball,
- (c) a red or a yellow ball,
- (d) a green ball.

30. Use the graph given below to answer the following questions:



- (a) What is the value of y when x is equal to 4?
- (b) What is the value of x when y is equal to 9?

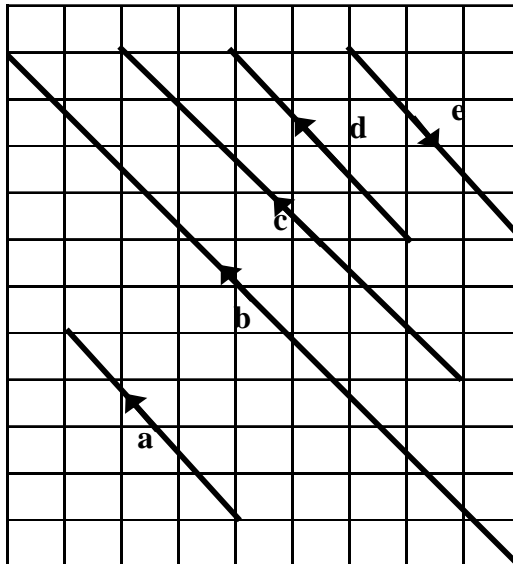
31. If $a = \begin{pmatrix} 5 \\ -2 \end{pmatrix}$, $b = \begin{pmatrix} -2 \\ 4 \end{pmatrix}$ and $c = \begin{pmatrix} -5 \\ -3 \end{pmatrix}$, find:

(a) $3b$,

(b) $2a + b + 3c$,

(c) Find the magnitude of $a + b$.

32. Write the vectors a , b , c , d and e in the form $\begin{pmatrix} p \\ q \end{pmatrix}$.



What is the relationship between:

(a) a and b

(b) a and c

(c) a and d

(d) a and e

(e) b and e

(f) d and c ?

END