

M10 - 5.0 - Polynomials Review

1) Check Answer

- a) $x + x =$
b) $x \times x =$

2) Simplify

- a) $(x + 2)(x + 3) =$
b) $(2x - 1)(x + 2) =$
c) $2(x + 4)(x - 1) + 1 =$
d) $(x - 2) - 2(x + 1)(x - 3) =$
e) $3(x + 2)^2 - 1 =$
f) $(x + 3)(x^2 - 2x + 8) =$

3) Find the Greatest

Common Factor.

- a) 15, 12
b) $6x, 12x$
c) $2x, 6x^2$
d) $2a^2b^3, 3ab^4, 6a^2b^5$

4) Factor

- a) $2x + 4 =$
b) $4a^3b^2 + 8a^2b =$
c) $-4x + 12 =$
d) $-8x - 4 =$
e) $2x^2 + 5x =$
f) $10x^3 - 5x^2 =$
g) $4x^2 + 8x + 6 =$
h) $x^2 + 5xy + 6y^2 =$
i) $x^2 + 3x - 2x - 6 =$
j) $x^3 - x^2 - x + 1 =$
k) $x^{\frac{1}{2}} + x^{\frac{1}{4}} =$

5) Factor

coefficient of x

- a) $2x + 1 =$
b) $\frac{1}{2}x + 2 =$
c) $\frac{1}{3}x + \frac{1}{2} =$
d) $0.04x + 2$

6) Identify a, b & c.

- a) $3x^2 + 10x + 5$
b) $x^2 - 3x + 2$
c) $\frac{1}{2}x^2 - 4x$
d) $3x + 5$
e) $-6 + 7x - x^2$

7) Factor

- a) $x^2 + 5x + 6 =$
b) $6x + x^2 + 8 =$
c) $x^2 + 5x + 8 =$
d) $-4 + x^2 + 3x =$
e) $x^2 - 3xz - 18z^2 =$

8) Factor

- a) $2x^2 + 7x + 6 =$
b) $2x^2 - 3x - 2 =$
c) $5x^2 + 12x + 1 =$
d) $3x^2 - 5x - 2 =$

9) Factor

- a) $x^2 + 4x + 4 =$
b) $x^2 - 6x + 9 =$
c) $9x^2 + 12x + 4 =$
d) $4x^2 - 4x + 1 =$
e) $4x^2 - 20x + 25$

10) Factor

- a) $x^2 - 25 =$
b) $x^2 - 121 =$
c) $x^2 + 1 =$
d) $1 - x^2 =$
e) $-x^2 + 49 =$
f) $9x^2 - 1 =$
g) $16x^2 - 25 =$
h) $a^2 - b^2 =$
i) $4x^2 - 9y^2 =$
j) $x^2 - 2 =$
k) $x^4 - 81 =$
l) $x^6 - 144 =$

11) Factor

- a) $3x^2 + 15x + 18 =$
b) $2x^3 - 4x^2 - 30x =$
c) $-x^2 - 5x + 14 =$
d) $27x^2 - 48 =$

12) Factor

- a) $x^2 + \frac{2}{3}x + \frac{1}{9} =$
b) $\frac{1}{6}x^2 - 2x - 18 =$
c) $t^2 + 0.2t - 0.15 =$
d) $0.02x^2 + 0.05x - 0.03 =$
e) $\frac{1}{25}a^2 - \frac{1}{36} =$
f) $0.25x^2 - 1 =$

13) Factor

- a) $(x + 1)^2 - (x + 1) - 12 =$
b) $2(x + 3)^2 + 3(x + 3) - 9 =$
c) $(x + 1)^2 - 4 =$
d) $9 - (x - 2)^2 =$
e) $(x + 2)^2 - (x - 3)^2 =$
f) $x^2 + 6x + 9 - y^2 =$

14) Find k/s to factor:

- a) $x^2 + kx - 10 =$
b) $3x^2 + kx - 10 =$
c) $x^2 + 8x + k =$
d) $kx^2 + 3x + 2 =$
e) $x^2 - k =$
f) If $(x - 4)$ is a factor of $2x^2 - 9x + k$.

15) Rectangle Area = $x^2 + 5x + 6 \text{ cm}^2$
Width = $x + 2$

a) Find Length.

b) Find Dimensions and Area if $x = 3 \text{ cm}$.

16) Square Area = $x^2 + 6x + 9 \text{ m}^2$
Find Dimensions and Area if $x = 3 \text{ m}$.

17) The volume of the rectangular prism is $3x^3 + x^2 - 10x \text{ in}^3$
Find Dimensions and Volume if $x = 4 \text{ in}$.

18) Triangle Area = $\frac{1}{2}x^2 - 2 \text{ m}^2$
Find base and height and Area if $x = 3 \text{ m}$.

19) If the area of a square is $4x^2 - 20x + 25$, find the perimeter.

20) Rectangle Prism

Width = $x + 2$

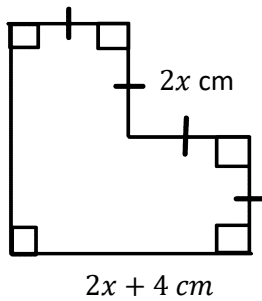
Length = $x + 1$

Height = $2x + 1$

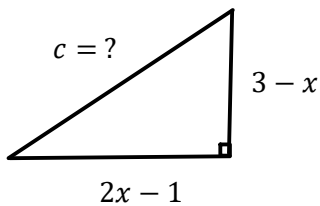
Find Surface Area and Volume.

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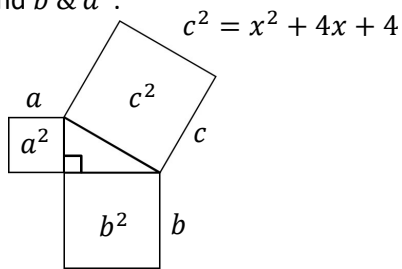
21) Find the perimeter and area.



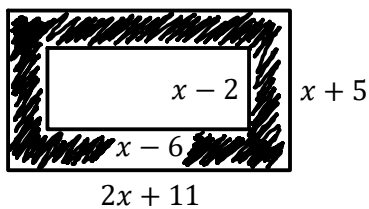
22) Find an expression for the hypotenuse and the area of the right triangle



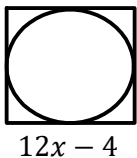
23) Find b & a^2 .



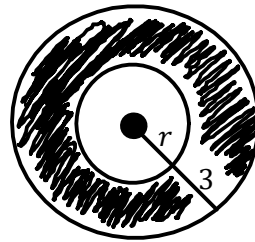
24) Find the shaded area between two rectangles below.



25) Find an expression in expanded form for the circumference and area of this circle inscribed in this square.



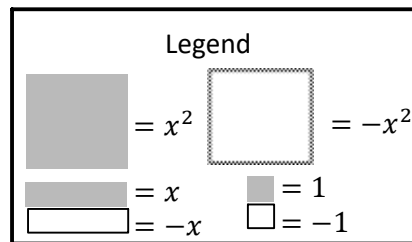
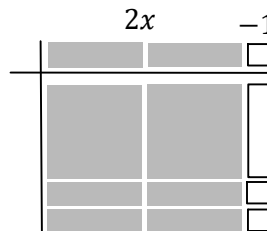
26) Find an expression for the shaded region.



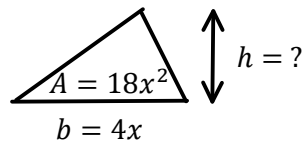
$$A = 9\pi x^2 + 36\pi x + 36\pi$$

27) a) Find an expression for the radius.
b) Find an expression for circumference.

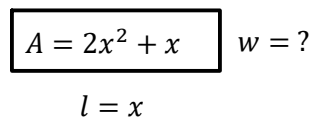
28) Solve for the missing dimension.



29) Find h .

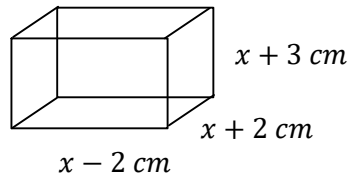


30) Find w .



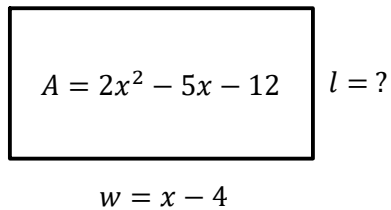
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31) a) Find an expression for Volume in expanded form.



b) Find Volume if $x = 5 \text{ cm}$.

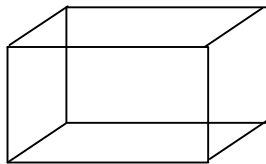
32) a) Find Length



b) Find Area if $x = 9 \text{ m}$.

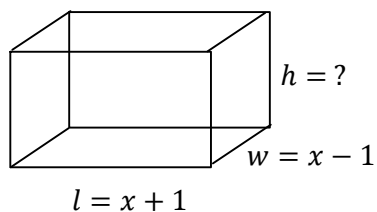
33) Find possible expressions for dimensions if:

$$V = x^3 + 5x^2 + 6x$$



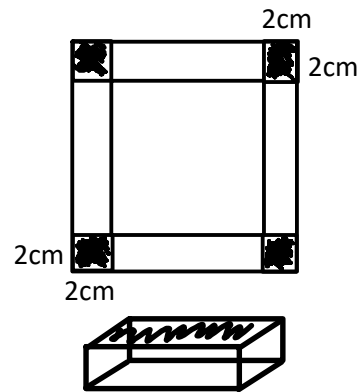
34) a) Find possible expressions for height if:

$$V = x^3 + x^2 - x - 1$$



b) Find Volume if $x = 4 \text{ in}$

35) An open top rectangular box with a square base and volume of 50 cm^3 is made by cutting equal lengths of 2 cm from each corner of a square piece of cardboard, then folding up the sides. Find the size of cardboard needed.



36) An open top rectangular box is made by cutting equal lengths from each corner of a 12 cm by 15 cm rectangular piece of cardboard, then folding up the sides. Find a possible expression for the dimensions.

